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JANUARY, 1954

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CONTENTS

Page

Community Organization—An Effective Tool 1
Leroy E. Burney, M.D.

Working with Your Community 7
Kenneth I. E. MacLeod, M.B., Ch.B., M.P.H.

The Community and the Health Officer—A Working Team 14
George Rosen, M.D., Ph.D.

Activities of the World Health Organization in the Eastern Mediterranean Region 18
Aly Tewfik Shousha, M.D.

Immunogenicity Studies in Human Subjects of Trivalent Tissue Culture Poliomyelitis Vaccine Inactivated by Ultraviolet Irradiation . . 26
Albert Milzer, M.D., Ph.D., Sidney O. Levinson, M.D., Howard J. Shaughnessy, Ph.D., Martha Janota, Katherine Vanderboom, and Franz Oppenheimer, Ph.D.

Continued on page vi

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Contents—Continued PAGE

Epidemiological Studies on Influenza in Familial and General Population Groups 34
ROBERT N. PHILIP, M.D., M.P.H., JOSEPH A. BELL, M.D., DR.P.H., DORLAND J. DAVIS, M.D., DR.P.H., MARC O. BEEM, M.D., AND PAUL M. BEIGELMAN, M.D.

The Diagnostic Laboratory in the Civil Defense for Biological Warfare . . 43
JOHN J. PHAIR, M.D., DR.P.H.

Studies on Bacterial Hemagglutination 49
ERWIN NETER, M.D., EUGENE A. GORZYNSKI, N. JOYCE ZALEWSKI, RHODA RACHMAN, AND ROSALIE M. GINO

Membrane Filter and Emergency Water Supply Control 55
GILBERT V. LEVIN AND EDMUND J. LAUBAUSCH

An Opinion Survey of the American Public Health Association by New York State Public Health Association Members 64
HERMAN E. HILLEBOE, M.D., AND WALTER E. BOEK, PH.D.

Comparative Evaluation of Three Screening Methods for Detection of Hearing Loss in School Children 77
ALFRED YANKAUER, M.D., M.P.H., MARGARET L. GEYER, AND HELEN C. CHASE

Home Safety and Accident Prevention in a Child Health Conference . . . 83
HAROLD JACOBZINER, M.D., M.P.H., AND HERBERT RICH

Editorials:
1953 in Retrospect 94
Medical Care in Richmond 95
Health Education in the Philippines 96
The Role of Epidemiology in the Control of Tuberculosis 97

Clearing House on Public Health Salary Information and Personnel Needs 98

Credit Lines 103

Books and Reports 108

Books Received 116

A Selected Public Health Bibliography 117

Public Health in Foreign Periodicals 120
GEORGE ROSEN, M.D., PH.D.

The Lasker Awards for 1953 124

Association News 129
Forty-Year Memberships. Recent Meetings of State Affiliates. Resolutions Adopted by the Association at the 81st Annual Meeting in New York, N. Y., November 11, 1953.

Employment Service 136

News from the Field 139

Conferences and Dates 147

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INDEX TO ADVERTISERS

	Page
American Public Health Association:	
Affiliated Societies	VIII
Book Service	XVII, XXVIII
Governing Council	X, XI
Membership Application Blank	XXIX
Sustaining Members	XXVII
Angel, H. Reeve & Co., Inc.	148
Ayerst, McKenna & Harrison Ltd.	XIX
Bausch & Lomb Optical Company	XX
Becton-Dickinson and Company	VII
Chicago Dietetic Supply House, Inc.	XXX
Corning Glass Works	XXIII
Crown Cork & Seal	XXII
Cutter Laboratories	V
Difco Laboratories	Back Cover
Directory of Health Service	148
Black & Veatch	
Samson Laboratories	
Emerson Venable, P. E.	
Professional Examination Service, A.P.H.A.	
Dixie Cups	148
Florida Citrus Corporation	IX
Hoffmann-La Roche, Inc.	XIV
International Equipment Company	XVI
Kimble Glass Company	XVII
Leitz, E., Inc.	XXIX
Lily-Tulip Cup Corporation	II
McKesson & Robbins, Inc.	XII
M & R Laboratories	XXIV
Ortho Pharmaceutical Corporation	III
Oval Wood Dish Corporation	XXV
Parke, Davis & Company	XIII
Pfizer Laboratories, Division of Chas. Pfizer & Co., Inc.	XV
Southern Medical Supply Co.	XXX
Vitamin Food Co., Inc.	148
Wallace & Tiernan	XXI, XXVI
Wyeth, Incorporated	XXXI

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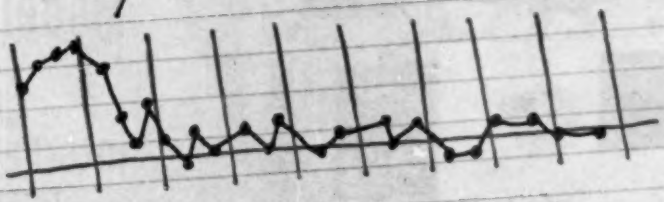

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1. Knight, V.: New York State J. Med. 50:2173 (Sept. 15) 1950.
2. Potterfield, T. G., and Starkweather, G. A.: J. Philadelphia Gen. Hosp. 2:6 (Jan.) 1951.
3. Swift, P. N.: Proc. Roy. Soc. Med. 44:1066 (Dec.) 1951.

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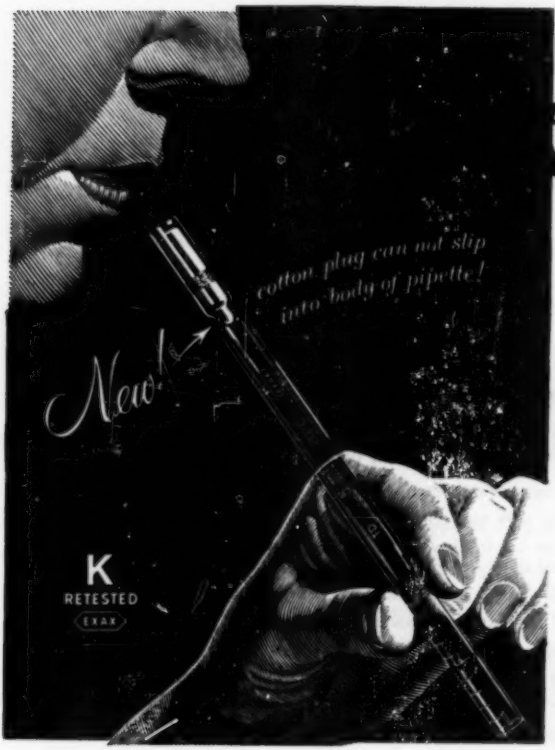

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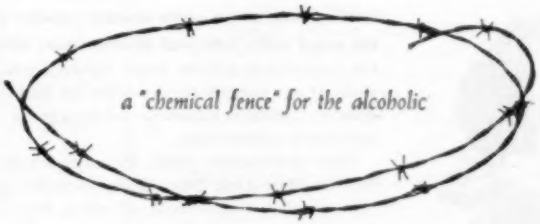

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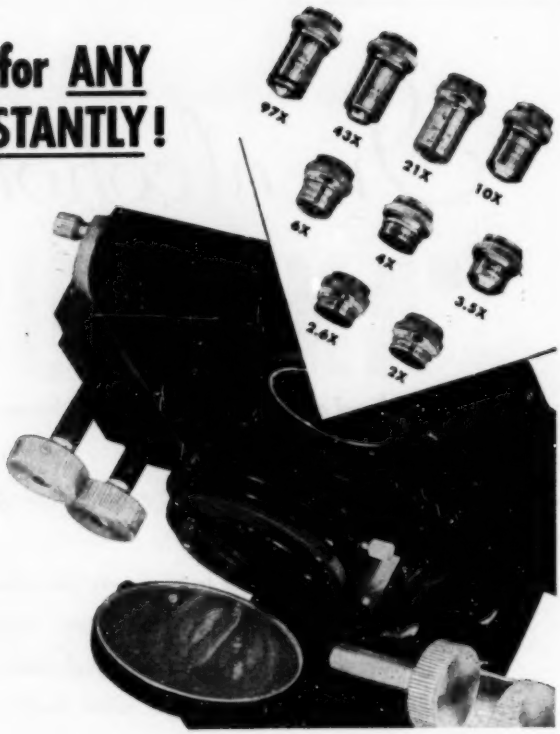

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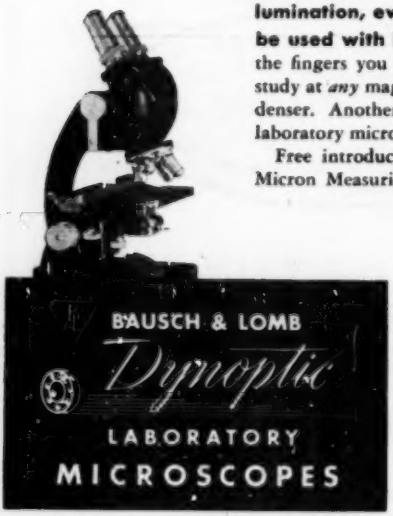

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References:

(1) Hopkins, J. G., et al: J. Invest. Dermat., 7, 239-253, 1946.

(2) Sullivan, M., and Fishbein, H. A.: J. Invest. Dermat., 10, 293-299, 1948.

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1. Tisdall, F. F., and Jolliffe, N., in Clinical Nutrition, New York, P. B. Hoeber, 1950, c. 23, p. 590. 2. Sealock, R. R., and Goodland, R. L.: Science *114*: 645 (Dec. 14) 1951.

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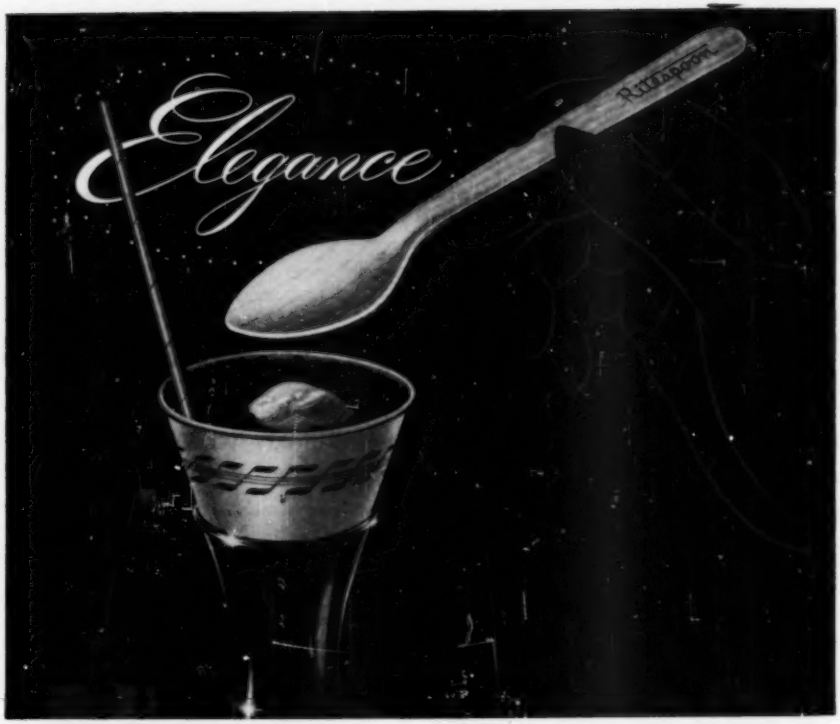

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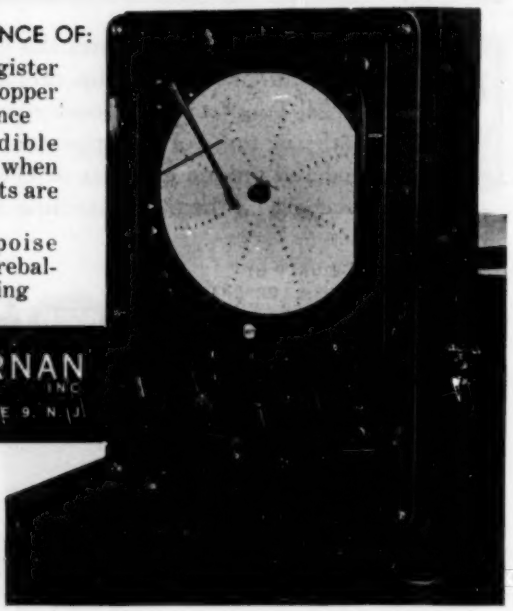

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Community Organization—An Effective Tool

LEROY E. BURNEY, M.D., F.A.P.H.A.

The pervading theme of the Eighty-first Annual Meeting, "Public Health—Product of Community Action," receives firm support here from one who bases his convictions upon long and broad experience. When all—in high place and subordinate position alike—are similarly convinced, then, indeed, will public health administration be on a sure footing.

✣ There is a radio program called, "This I Believe." I would like to paraphrase this title in introducing the subject, "Community Organization — An Effective Tool." I believe that frequently those of us in the field of public health are inclined to take credit for activities resulting in improved health when actually what we have done, or have not done, had little effect upon the situation. I believe that those of us who have chosen public health as a career frequently forget that the public in general is not as impressed with the importance of various health activities as we are. Consequently, we often attempt to secure support for programs which we believe to be essential, rather than stimulating individuals and groups to study their needs in order that they may decide what they want to do about them, and how they wish to attack them.

For many years state health officers have been critical of categorical grants from the federal government. It is held that funds made available should be for general health, enabling the states to determine the activities and programs to be emphasized. I believe this attitude is sound. However, year after year, categorical grants have increased because they have been more popular and tangible so far as Congress is concerned, while grants for general health have decreased because it has been most difficult for our representatives to understand and appreciate the services of local health departments. In all probability, public health workers will have to accept this situation and recognize that people are not interested in public health, per se, but they are concerned when we can demonstrate the benefits which accrue to them when certain procedures and services are inaugurated.

I believe that we are living in an age in which it is customary for people in general to permit a few individuals to

Dr. Burney is secretary and state health commissioner, Indiana State Board of Health, Indianapolis, Ind. This paper was presented before the Health Officers Section of the American Public Health Association at the Eighty-first Annual Meeting in New York, N. Y., November 10, 1953.

do their thinking for them. They are inclined to accept any solution to an existing problem, provided the solution requires little action on their part. The professional public health worker is not alone in being eager to provide the answers to society's ills—professionals in the fields of education, recreation, planning, and others, are willing to provide some of the answers, too. Public health will find itself in competition with the other areas for the public's acceptance, unless those of us in public health recognize that it is not our job to teach people what to do, but that it is our job to help them become the kind of people who will know what to do. If we accept this as our responsibility, we will find ourselves developing new procedures and methods of bringing our technical and scientific knowledge to the public.

I believe, too, that many public health workers take too much for granted as to the essentiality or value of their services, and as to the public's awareness of the needs for these services. We in public health are equipped for our jobs either by experience or training or both. The specialist's attitude toward a certain concept of public health is determined by his previous training and experience. The importance he places upon a drilled well, proper sewage disposal, dental health, or nutrition results from 5, 10, or perhaps 25 years of intimate association with these matters. But as the specialist works with the public, he is dealing with individuals who have not developed this vital concern. In fact, much of the experience of the individual may discourage him from appreciating what the expert accepts as true. Our attitudes are based upon many years of experience. We cannot expect the public to be greatly impressed or change its behavior or attitudes after 10 or 15 minutes of conversation.

I believe that everyone—lay and professional—has something to contribute in the promotion of physical and mental well-being. If individuals fail to recognize this fact, the achievement of our objective will be retarded. Finally, I believe that to deal as effectively with today's major health problems as we have with those of the past 50 years our efforts must include more and more of the health educational approach. By this approach a better understanding will result by the individual and by the community of the needs and the responsibilities for meeting these needs.

I do not wish to minimize the tremendous contributions of public health workers of the past, or to detract from their glory. They accomplished miracles against greater odds than we face today. We are proud of what has been accomplished in sanitation, control of communicable diseases, and maternal and child health. We share in the reflected glory of the pioneers of public health. We are extremely proud of the high percentage of our communities having approved public water supplies. But how many of these public water supplies were demanded and supported because the public wanted a safe water supply as compared to their desire for the comfort and convenience of an inside toilet and running water in the kitchen? Have Grade "A" milk programs spread from city to city because of the demands of the people for a higher quality milk or because of economic necessity and competition? Bovine tuberculosis in human beings is practically a forgotten entity in the United States. Was it the prevalence of bone and glandular tuberculosis in people that brought about this remarkable achievement or the economics of the dairy and cattle raising industries?

We have preached for years concerning the dangers to human health of feeding uncooked garbage to swine. Legislation prohibiting this practice in Indiana was not enacted until we had

hogs die from or become diseased with vesicular exanthema. Our legislators could not act quickly enough when the hogs became ill.

Again, permit me to say that I do not enumerate these examples to minimize past accomplishments. I do believe, however, that the desire for good health has not always been the motivating force in securing necessary action. More significant and disconcerting, I believe that there has not always been public understanding of public health objectives. Perhaps public understanding was not so essential in securing a safe water supply or the benefits of other procedures from which people have benefited with little or no action required of them. The problems that we have met and solved are quite different than those we face today. It is entirely possible that the methods used in the past will not prove effective against present-day health problems. The successful worker in the future will be the one who fully appreciates the importance of creating an environment in which people can consider their needs and plan what they want to do about them.

Public health officials must recognize that good health cannot be forced upon the public. Strong and effective health education programs are now a major function of every successful health agency in the country. Of singular importance, too, is the fact that most of the outstanding health education programs operating in the various states include the promotion and advancement of community organization as one of the major program responsibilities. In connection with the Association of State and Territorial Health Officers, I recently had occasion to complete a survey covering the responsibilities of the divisions of health education in the various states. Results of that survey indicate that public health services in the area of community organization hold a high priority on the list of educational objectives.

Meantime, as we continue our educational programs, we discover that there is a tremendous untapped resource of leadership in the communities of the various states. It then falls to the official and voluntary health agencies to encourage and develop this potential leadership, so that communities will be in a better position to provide their own health services. When people are aware of the needs and have been educated as to the various methods of meeting such needs, they are willing and anxious to solve their own health problems.

Old tools are discarded and new ones developed as technical knowledge and functions to be accomplished advance. We are at a stage of health development in which community organization is not only an effective but essential tool. Comprehensive programs, such as those directed to bring maximum benefit to persons with chronic diseases and to contribute to programs to promote the optimum growth and development of children, require the coordination of the efforts of many individuals and agencies.

Our public health councils and citizens' committees established by specialty groups have often been isolated steps taken by particular disciplines to secure community assistance and support for their own programs. Broad community organization is merely a further development of this movement, bringing all service institutions into more effective relationship with each other and with their community.

We might well ask why this more comprehensive approach to community organization has not been established long since. Is it because there has not been a real need for it in the past? That is probably one reason. Consider the problem of typhoid fever some forty to fifty years ago. The public health and the clinical aspects were

quite distinct; although, there was need for certain areas of cooperation between the two. At that time the public health people were concerned with promoting good sanitation to prevent the contamination of drinking water, milk, and food. The physicians were primarily concerned with care and treatment of the cases when they occurred. Both public health people and physicians used typhoid vaccine to prevent the occurrence, particularly after possible exposure.

Infant diarrhea is another example of a condition that was prevalent in the past and caused a high incidence of infant deaths. Contaminated milk was recognized to be a primary source of infection. Again, to control this condition, public health officials exerted their efforts to help secure pasteurized milk, and through the medium of health education to teach parents the value of pasteurized milk and of the proper preparation and handling of infant formulas. Clinicians were concerned with treating cases that occurred, and in their own practice instituted proper feeding to prevent the occurrence or recurrence of diarrhea. In these two types of conditions there were areas of overlapping. For the most part, however, these areas come within the respective spheres of influence of private practitioners and public health officials, such as education and immunization.

The line of demarcation was fairly satisfactorily drawn in regard to the role of clinicians and public health departments in acute illnesses and communicable diseases. The requirements of patients with chronic diseases do not allow such a sharp demarcation. The work of Dr. Howard A. Rusk and others in the field of physical medicine and rehabilitation and of Dr. E. Michael Bluestone and Dr. Martin Cherkasky in the home care program clearly demonstrates the importance of close integration of clinical, public health, and other services if the needs of chronic disease patients are to be met to a reasonable degree.

Consider briefly the implications for true coordination in cardiac programs, since cardiac conditions are one of the real health problems at present. First, the proper care of cardiac patients requires a completely different concept of patient care than in acute conditions, such as pneumonia. After an attack of pneumonia, if there are no complications, the person can return to his regular life and activities. With antibiotic drugs, the recovery period is usually a matter of days or a week or two at most.

On the other hand, after a serious cardiac attack, persons have to readjust their whole plan of living in order to live within their cardiac reserve. Proper care requires a long period of hospitalization to assist the person through the acute attack. This may be a matter of many weeks or months of close medical, nursing, and related care in the home. The purpose of treatment is to assist the person to overcome the acute attack and repair the cardiac damage. The repair at best leaves a scar and a loss of cardiac reserve. Many persons cannot look forward to taking up their life's functions at the same level of activity as before the attack. They need to be helped to understand and accept their condition so they can live within their limitations. Since the limitation is not for a day or month, but a lifetime, the actual acceptance of the condition is often a crucial factor in the person's recovery. This adjustment requires intensive work with the patient and the family. The greatest amount of actual treatment will be concentrated in the weeks and months after the attack, but such persons properly need continued health supervision for the rest of their lives.

A community organization's primary contribution is to establish an environment in which its member agencies can function with maximum effectiveness.

The program is designed to make the public more receptive to, and more understanding of, its members' programs, and, at the same time, serve to stimulate groups to examine their own programs for the purpose of determining how well they are meeting the changing situations.

In Indiana we have a relatively large number of health councils, many of which have operated most effectively. For example, the council in Elkhart County, working through more than 600 volunteers, was successful in securing the signatures of more than 10 per cent of the registered freeholders upon a petition favoring the establishment of a full-time health department. In addition, it conducted an educational program which resulted in a favorable vote on the proposition at the general election—a surprising accomplishment, when it is revealed that 29,787 out of 33,000 voters expressed an opinion, 22,258 in favor and 7,529 opposed.

Equally good results were achieved by a group in Clark County, working within the framework of a council of social agencies. In this particular case, the executive secretary of the county tuberculosis association provided a major portion of the leadership. There are many other examples that could be cited to prove the strength of which a health council is capable.

We may wonder, at this point, why so much confidence is placed in the power of this type of organization and the assurance we express that such a group will achieve the desired results. It has power because its procedures and philosophy encompass fundamental principles of the democratic process. First of all, the council idea implies that most of the existing health problems are created by the people and, consequently, solutions cannot be developed without the intelligent and enlightened understanding of the people. Once the people have developed an appreciation and respect for good health they will work to gain these benefits for themselves.

It is also recognized that it is necessary for all to be concerned with all phases of community programs and sincerely respectful of the interests of others, remembering that the sphere in which we operate represents only a small portion of community activity. If we expect the recreational leader, the school administrator, and the welfare worker to be interested in our program, we must be equally interested in what they are doing.

Coupled with this is the fact that as people work together to achieve objectives, confident that when all are aware of the facts wise decisions will be made, a strong unity and coherence will develop among members as each identifies his own purposes with those of the group. If an individual has a part in making decisions, even though his part may be confined to listening and learning, he has a greater stake in the outcome and, therefore, will feel a greater responsibility for making the enterprise successful.

The immediate accomplishments of community organizations are not the most significant. They do improve the community and better the status of each individual living therein, but their greatest contribution lies in the potential benefits which can be derived from such joint expenditure of effort and energy.

As those in such organizations solve immediate problems in accordance with the guiding philosophy, they do two things: they eliminate the initial irritant, and they set up an action pattern for the solution of future problems. Once, the habit of planning and working together begins to establish itself among agencies and organizations, the machinery for setting up and carrying through almost any kind of project from which people and communities benefit is thereby strengthened. The true ob-

jective of a community organization, and also of health education, is not the solution of a specific problem but the establishment of an environment in which solutions to all problems may be developed.

Regardless of the channels into which community action is directed, the fact that those in the community are interested enough to take part in such action is a step in the right direction. If the various groups or individuals unite and organize themselves into a community health group, they will find that the total health needs of the community soon become apparent. Even when the organization is established for a specific purpose, such as promoting a school health service program, it will soon be discovered that the same basic organization is capable of solving other health problems of community-wide scope.

You may call it a health council, a citizen's committee, a community organization, or any other name you choose. In any case, when a person becomes an active participant of such an organization, he is doing his job as a citizen and a good neighbor to achieve the greatest possible benefits for himself, his family, and his community.

In summary, good health cannot be forced upon people. It is not our job to tell people what to do, but it is our job to assist them to become the kind of people who will know what to do. Community organization is an effective tool to use in achieving this objective, the establishment of a medium through which solutions to all problems may be developed.

State and local public health departments should assume initiative and leadership in the establishment of community organizations and provide sustained technical assistance. But our people must remain in the background, for if the organization is to accomplish anything constructive its actions must be of and by its members.

Using the NIH Clinical Center

The new Clinical Center of the National Institutes of Health was dedicated in July, 1953. By the year's end, the diseases under investigation fell, generally, under the classification of common chronic conditions and some of the infectious diseases. The chronic diseases are for the most part being selected in earlier phases of the disease that do not call for prolonged hospitalization.

As tools in helping physicians and their patients to understand how patients are selected for study and under what conditions, the National Institutes has prepared a folder, "Current Clinical Studies and Patient Referral Studies." Also available is a "Handbook for Patients at the Clinical Center." These help to orient the patient and his doctor to the relation of the seven separate institutes of the National Health Institutes dealing with separate categories of diseases and the new clinical center.

In addition, there is available a general pamphlet "The National Institutes of Health Clinical Center" which sets the place of the clinical center in NIH.

The three documents are, respectively, Public Health Service publications Nos. 284, 314, and 315. Each is available from the Government Printing Office, the last mentioned at 10¢.

Working With Your Community

KENNETH I. E. MACLEOD, M.B., Ch.B., M.P.H.

Experience meetings have a long history of holding the attention of many sorts of audience. "These things we did, and this happened" is still the essence of an absorbing story, however familiar and work-a-day the recounted experiences may seem at the start.

✣ This is an account of the work done with the Associated Boards of Health of Nashoba (Mass.), in particular, emphasizing the working relationships with other official agencies and with the citizens. The best way to start is to quote from a letter to the Nashoba Associated Boards of Health in the annual report for the year 1952:

> The voyage on which the stout ship "Nashoba" so gallantly set out in 1930 has taken its stalwart crew—The Nashoba Associated Boards of Health—over strange and often uncharted seas. You have ridden many a storm, and no doubt sought haven in many a port since those early days. The timbers of your craft, however, were sturdily put together, and skillfully wrought. The ship, although now twenty-two years old, is as sound as ever and well fit to take you voyaging many a year.

Nashoba

The soundness of Nashoba, emphasized in the letter, is as much due to the attitude of the people of the Nashoba towns and to that of certain key individuals as to the work per se of the professional staff. When the Nashoba towns were surveyed for the Commonwealth Fund in 1930 one of the things that struck Dr. W. F. Walker, who was responsible for carrying out that survey, was the over-all likenesses between those towns, their "uniformly prosperous, neat, and well-kept appearance."[1] New England towns, of course, are traditionally independent and in some instances (thinking of one town in particular) they are so independent that they remind one of the town of Berwick in my native Scotland. That town is still at war with the French because as an independently incorporated town it has not yet signed the peace treaty with Napoleon. However, Nashoba proves that even independent New England towns can work together when the cause is sufficiently uncontroversial and a feeling for the greater good of the people overcomes traditional prejudices and where sound and diplomatic guidance is exercised by the local leaders, both lay and professional.

After the original experimental period from 1930 to 1935, when the Commonwealth Fund maintained and financed the demonstration health unit, 10 of the 14 Nashoba towns decided to carry on and pay their own way. However, it has not all been smooth sailing over the years since 1937, and Nashoba was particularly hit when, because of the second world war, the area was deprived for a time of all its trained public health personnel. Nevertheless, so well was Nashoba accepted by the people, by the Associated Board, and by the local medical profession that during those critical years the local doctors staffed and maintained the popular Well Child Conferences, a service they gave willingly. Nashoba is grateful to those

Dr. Macleod is medical director, Nashoba Associated Boards of Health, Ayer, Mass. This paper was presented before the Health Officers Section of the American Public Health Association at the Eighty-first Annual Meeting in New York, N. Y., November 10, 1953.

local doctors. Since the unit was reactivated in 1948, Nashoba has continued to expand its various programs in the field of sanitation, in its preventive medical and nursing services, in its public health laboratory service, and more recently in its medical social service.

It is important to realize that administratively (because of the law under which it is constituted [2]) Nashoba operates under some difficulty in that in its association—every member of the three-member local boards compose the Associated Board—for 14 towns this constitutes a 42-man board. This board meets quarterly. There are inherent difficulties in this and these will become more obvious as this discussion proceeds. As good a way as any to begin this account is to report briefly on the history of our recently added Dental Health Program.

The Dental Health Program started off not as a new thought. It had been considered before, particularly because only one or two of the Nashoba towns have resident dentists. It had occurred to the staff, therefore, that where there was a vacuum it might be good to start a preventive dental health program using a dental hygienist to make surveys, examine, clean, and apply topical fluoride to the teeth of school children of selected grades. This plan appealed generally to the board.

At our annual meeting in May the plan was presented and it was suggested that each board go back to its own town, discuss it among themselves and with others, and make up their minds whether or not they would really like such a program. In June, at a later meeting, nine of the boards accepted the program outright, despite the fact that it would cost them an additional 12 cents per capita. The other five boards for various reasons had not quite decided, and one board definitely decided against the program.

What Happened in One Town

Taking the town that reacted with a definite "no," and considering the attitude of the three members of the board, we can get a rough idea of what it means to work with these Boards of Health. Town X is small (under 1,000 population). It has a lot of things to pay for—schools and roads, among other items. Its entrance into Nashoba is interesting because Town X is a good example of a Nashoba town. It was a member town of the original experiment, and in 1936 it was one of the four towns that dropped out and remained out from 1936 until 1951 when it rejoined Nashoba. At that town meeting in 1951 at was voted into Nashoba by a voice vote on the motion of one of the selectmen. A probable reason that the matter came up at all in 1951 lies in the fact, that in that year, a resident of the town became a town nurse in one of the other Nashoba towns. Her family were people of weight in the community and this enlivened interest. Also, the particular selectman who made the motion was health conscious. He was not health conscious by accident, for Dr. Sidney Cobb, my predecessor as medical director, had applied himself assiduously to the task of making people health conscious, and this selectman was one of the individuals upon whom his good ideas had been fostered.

Because the matter came up * as a spontaneous motion from the floor, there was no time for a build-up of any opposition from any quarters particularly opposed to the idea. During the town meeting—and New England town meetings when they are lively can be extremely interesting—the matter was really decided by the townspeople when a woman, who is one of the Nashoba nurses, made the statement (reading from the town warrant) that if they

* By law an article had to appear in the Town Warrant.

could afford to spend $300 on a cemetery commission and cemetery upkeep, they could certainly afford to pay rather less than that sum to join Nashoba, especially as through the monthly Well Child Conferences and the Immunization Program the prevention of one case of diphtheria could more than balance in human happiness the small sum involved.

At present the three selectmen of this small town act as the Board of Health. In that connection we have found over the years that there are two types of local Board of Health appointees who are not always too helpful. One is the "ex officio" type who may or may not be interested in health. The other is the person who takes an active interest in health, but only from the point of view of cutting down expenditures or preventing what he or she believes is some form of what is so loosely termed "Socialized Medicine."

Our experience in Nashoba has shown that continual education of the townspeople is necessary and is best in the form of meetings with PTA's, health committees, as well as with individuals at the Health Center and elsewhere. We have increased the emphasis on education of the public in general with regard to the Nashoba services through the newspapers, through word-of-mouth by the personnel, and through every other means possible. Believing it is a most important duty of the health officer to keep in touch with the key personnel in each town, I have also tried to get them to know me as their friend.

In Town X it was precisely this method I used to try to get an improved attitude on the part of the Board of Selectmen. I met with the board members, both individually and as a team, and spent time with each — with one member while he was pruning his fruit trees. When we discussed the Nashoba services and whether or not this town was making the best use of them, I sensed that this individual was very conservative. However, he was not blindly conservative and was willing to listen to the story, although, as it is so often stated about my fellow countrymen in Scotland, he is afraid of seeing even one cent wasted. Incidentally, at the Amherst (Mass.) Health Conference this year we heard Dr. Gaylord Anderson give an excellent paper on just this subject, a paper in which he emphasized that money well spent in health is an "investment." This is the argument I used to sell Nashoba to selectman number one.

Selectman number two, a special policeman, had his own farm and was engaged in many other activities. When I met with him he was busy with his tractor and over the loud purring of the engine, and in the broiling sun, we discussed Nashoba. He looked a little guilty and apologized for not having attended any of the Nashoba meetings since he had been appointed selectman. I told him that I realized selectmen in the towns where they also acted as a Board of Health had very little time, but I also emphasized that health was important, and that at least one of the selectmen should take upon his shoulders the business of health and attend the meetings of the Associated Board at the Health Center.

Selectman number three, who works in a hospital, was very tired as he had just arrived home from his work when I saw him. His attitude toward Nashoba was sympathetic; he also had not attended many of the meetings at Nashoba and stated that it was not always possible for him to do so. I re-emphasized the importance of attendance and the taking of a live interest in the health of the town.

Administrative Difficulties

The complicated working of our association is brought out well by the fact

that each board by law[2] has the legal responsibility in its own town for health matters, and the health officer and the sanitation officer have to be appointed annually in each town as their agents. This enters into the picture in considering the Dental Health Program. One town, for example, had $250 in a special fund raised by private means for dental work and naturally they wished to apply the money toward starting this new Dental Health Program. The chairman, on the other hand, took the view that because all the programs of Nashoba have always been operated as one and were paid for by a tax assessment that there should be no deviation from this past method of operation. A good deal of the discussion at the quarterly meeting in June took place over this one issue. In the end a member of one of the boards, a doctor, made the motion that the Dental Health Program should be adopted and that the money should be raised through the regular assessment. In this manner the program finally got under way.

It is not possible to cover every aspect of the interpersonal and interagency relationships within the Nashoba orbit, but one program with which Nashoba is partly concerned should be briefly touched upon — that is a Preventive Mental Health Consultation Service which is starting in 26 towns in north central Massachusetts and which benefits 11 of the 14 Nashoba towns. Since its inception a year or so ago, the Mental Health Association of North Central Massachusetts had been working on a proposed plan for this consultation service.

Programs of this type do not start easily in any community. One obvious reason is the innate fear of many people regarding mental health in general. It needs much explanation. Indeed, it needs to be explained in the simplest words so that all lay people can understand, and this is easier to say than to do. Although a psychiatric social worker had visited the towns a year previously, nothing had happened in the interval at the town level and people had forgotten, even the teachers in the schools visited had begun to forget. In reopening the question of starting a service in the area it meant that more spadework had to be done. In our Nashoba towns this meant actually visiting key people in the various towns in company with the chairman of the Mental Health Association. At our annual meeting in May to which all board members come with their wives or husbands and to which other guests are invited, the speaker of the evening was purposely chosen from the field of mental health. That evening proved how little had been absorbed previously on the subject. To many of the people who listened to the main speaker that evening the terminology (although made as simple as possible) was still vague.

As the program is a cooperative venture and as the money is supplied from two sources (from the State Mental Health Department with a contribution from the local association mainly for clerical assistance, office headquarters, and equipment and supplies), the question of raising this local share meant visiting each individual town again. To do this a chairman had to be selected in each town. It is no longer surprising to me as to why the supposedly key people in towns do not wish to take on such a chore as being chairman for a fund-raising drive, even for such a good cause. The people approached turned it down time after time, but finally we enlisted a suitable individual in each town who felt the cause worthy enough to let no objections, on the basis of the hard work, stand in the way of the desire to help.

In one town the individual was a woman of means with a great interest in her own town and in people in gen

eral. In another town, she was a school teacher who had personal reasons for being interested in such a program. In yet another town a farmer's wife decided to serve—she thought the best way to raise the small amount of money was by a fruit sale. The chairwoman in one of the towns decided that it might be best to raise the money by getting prominent people in the town to become subscribing members of the Mental Health Association. The variety of methods, the variety and types of individuals, and variety of reasons for wanting to help are all illustrative of the complexity of the community when it comes to the practical business of working with it.

Working with Boards of Health, with individuals in the towns, and with people generally, reveals — from the practical point of view of getting along —that the old adage "smile and the world smiles with you" is still very sound advice. No matter how much you feel like crying, it is equally important to remember that "cry and one cries alone." Also, in addition to presenting a sunny side to the world, one has to be an extremely patient listener, and far more often than not one has to put up with—and I use these words advisedly —some extremely difficult attitudes. This is illustrated best by the following story:

Donald was the blacksmith in a remote Highland village and Angus, with whom Donald was not at all friendly, was the local baker. Yet visitors to that village noticed that Donald was always very polite to Angus in the street and even said "Good morning" to him. One day a puzzled lady visitor questioned Donald about this, asking him why he troubled to speak to Angus in such courteous terms. Donald replied, "Woman, that's tact."

Tact is certainly what any health officer needs to have at all times. It is easy enough to say this, but at moments even the best of us feel extremely impatient. It is then one should restrain himself, for otherwise the battle may be lost before it has really begun.

Also, work with our Boards of Health underscores what Dr. Mustard says in his text book, Rural Health Practice (page 23).

> Where a Board of Health is active it is essential that the matter of full-time local health service be thoroughly explained to them. . . . In many situations, failure to obtain the endorsement of the local Board of Health means failure to obtain the local appropriation. Members of this Board may not be experts on Public Health administration, or in epidemiology, or in sanitary engineering, but it must not be forgotten that they represent local authority, so far as it relates to the public health, and occupy a position of prestige.

How important all this is has been brought out ever since I first joined the Nashoba organization. The prior poor attendance at the quarterly meetings was due to the fact that their responsibilities with regard to the total program and the operation of Nashoba had been insufficiently explained to individual board members. Hence, at the first three or four board meetings with the aid of a blackboard I explained the operation and financing in detail. I particularly discussed the cost in relationship to the total town expenditure and this is resulting in better attendance and more over-all understanding as is evident by the questions addressed to the chair.

The importance of educating the members was particularly brought out at a recent board meeting when, in discussing the increase of cost to the individual boards of the expanding services, one member came to me at the end of the meeting (a representative from one of our smallest towns) and said "after all doctor if we have to pay a dollar instead of sixty cents it is surely worth that, and we can afford it."

How careful one has to be from the point of view of the broad policies and in keeping with the politics of an area like Nashoba was brought out recently in working with two of the boards. In reference to a nuisance complaint which has been a perennial worry to one of the larger towns, the selectmen of the town asked me to attend a special meeting to which several of the state legislative representatives had also been invited. The town counsel had asked me to send letters to the senator and also to several of the legislative representatives most concerned in the particular situation. These letters were sent out as requested, and worded to the very best of my ability, I thought. But it was very obvious at the meeting that one of the legislative representatives took exception to one phrase, indeed, one word in my letter—the word "only." "Only" is a very innocent little word standing by itself, but when qualifying a phrase it can make the difference between pleasure and displeasure. I am glad to say, that in spite of this, the particular meeting went off with feathers not too ruffled, but the nuisance problem will remain with that town for a considerable time as yet, for it involves complicated questions of law. In fact, a special act will probably have to be passed by the legislature to solve the problem.

In the case of the other town, local politics were burning not only the fingers of local people in that town but also the fingers of the personnel of the Nashoba Health Department. The Board of Selectmen in that town were concerned about duplication of health services so I was invited to meet with the board to explain the situation, and they appeared to be satisfied with my explanation. I stated that I knew the town was not getting its fair share of Nashoba and suggested how the service might be improved. I also explained that the Board of Health was my employer, and that naturally I could not afford, as their employee, to start telling them how to run their business. It was suggested that I meet with the Board of Health to discuss broadly the improvements of the Nashoba health services to the town. This was done. However, there was another difficulty because one of the board members who had been violently opposed to the town joining the health unit at all allowed his evident dislike to overcome his immediate sense of propriety.

Finding Nashoba and the staff itself attacked, I thought that here was an occasion where attack had to be met with counterattack. I collected my papers and told the chairman that unless the meeting could be amicably conducted and the discussion held on an objective level there was no point in going on with the meeting and that I was quite willing to withdraw. At that point another member requested of the chairman that the meeting be more amicably conducted. Thereafter, the meeting went on quite smoothly for an hour, but it became obvious that this particular individual on the board would not subscribe one iota toward eliminating the duplication of services and, there, the matter still stands.

Both of these meetings are illustrative of the ways of personalties in small towns and how their attitudes affect the operation of such a health unit as Nashoba, especially when strong personalities clash or for any reason are opposed to the health unit.

I have no fears for the future of Nashoba. It has "an understanding and appreciative public who will support good public health work, and who will cooperate in maintaining it."[3] The work of 20 years in these independent New England towns has had good results. The people generally believe in Nashoba; the town officials generally believe in Nashoba. Recently, the finance committee of one of our

largest towns visited the center. They came in with their sleeves up, determined to get down to the business of finding out whether the town was really getting its moneys' worth from Nashoba. This committee went away well satisfied, and since the visit that particular town believes more than ever in the value of Nashoba. It really does pay to be frank, to let the people know what you are doing, why you are doing it, and to carry out above all Dr. Gaylord Anderson's advice, "to make sure that money spent on health services is wisely spent, for the returns are more than worth the investment."

In conclusion, I would like to quote once more from our annual report in its last section which is entitled "Immediate Aim":

As was pointed out under the discussion of the milk program, Nashoba's benefits do spill over into adjacent towns to a very considerable extent. One or more of these towns could consider the possibility of improving their own health services by becoming a member town in the Nashoba Association. Let the voice of democracy therefore be heard at the town meeting! Let it sound off for still better local health services! Let it convince the citizens that to join a local health unit, such as Nashoba, is indeed sound business, and completely in line with modern thinking and modern practice.

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The Journal 25 Years Ago

Colds, Accidents, BCG Then As Now

What was on the mind of the writing fraternity among the Association members as 1929 began? Obviously, the common cold and particularly its relation to schoolroom ventilation. The January issue had a lead article by the late Thomas J. Duffield on "The Weather and the Common Cold" as well as a "Symposium on Schoolroom Ventilation." Common colds appeared to be related more to precipitation than to outdoor temperature. Colds appeared to be more prevalent in classrooms with lowest humidity, and some indication, but far from conclusive, that there were more colds in mechanically than in naturally ventilated classrooms.

Accidents were in the writers' minds. January saw "What We Do Not Know about Accidents" by R. L. Forney in which he suggested reporting methods by which the then unknown number of accidents, the place and circumstances of their occurrence might be obtained. February saw "Our National Accident Problem" by Charles B. Scott as a lead article. Here again, the plaint was of insufficient information and suggestions for better reporting. March produced an editorial which called on the profession to educate the public in the prevention of accidents.

BCG was on the public health mind with an editorial in January concluding that for the present we "must recommend caution in the use of the vaccine while hoping for the best." February saw "Effect of Calmette's BCG Vaccine on Experimental Animals" by the late William H. Park, M.D., and Merrill J. King, M.D. Detailed and illustrated with numerous charts and tables, it, too, was cautious. "We do not feel justified in drawing conclusions as to the absolute safety of the BCG vaccine until further experimentation has been done covering a period of years on vaccinated animals."

The Community and the Health Officer—A Working Team

GEORGE ROSEN, M.D., Ph.D., F.A.P.H.A.

The concept of taking "the people" into active partnership in community health work is not new—indeed, it is a century old, as this discussant points out—but what is essentially new is the body of field-tested, accepted ways and means for enlisting people in our crusade.

✣ Community organization is at least as old as the modern public health movement itself. In implementing the British Public Health Act of 1848 locally, Edwin Chadwick took great pains to meet objections and to gain good will. The inspector of the General Board of Health was instructed when he arrived in a town to associate himself with the doctors and the clergy, to call a public meeting prior to making an inspection, and to invite all the important local officials as well as a deputation of the citizens who had petitioned the board to take action. At the meeting the inspector cited relevant evidence and statistics and explained the procedure he would follow. Through his work and his reports, the inspector was expected to form local opinion.

Other early instances of community organization can be seen in the activities of the Health of Towns Association in England, and of the Citizens Association of New York and its Council of Hygiene and Public Health which brought about the organization of the Metropolitan Board of Health in New York City.

Accepting the fact that community organization has been and is an integral part of public health work, as well as the point made by Dr. Burney that we need more and better community organization, let us look at this activity. What do we mean by community organization? What is community, and in what sense do we organize it?

Since throughout this discussion the concept of community will be employed as a point of reference, let us consider its nature and characteristics. The word "community" is used in various senses. It refers first of all to a localized grouping of people. The people who live within this relatively limited area generally have certain common needs and therefore common interests. These may be found at various levels of complexity and differ in degree both as to permanence and intensity. Community may, therefore, also be defined in the sense of a minimum of common interests. In other words, community refers not only to the spatial extent of a human grouping, but also to the measure of working agreement necessary for it to be an operating concern.

Furthermore, as people live together and take into account the actions of others, mutual expectations and concerns arise. With continuing interaction over a period of time, relatively definite patterns emerge, some of which may achieve a degree of permanence as social institutions. However, a group of people develop not only an institutional structure, they also develop goals, norms, and values in which all share in varying degree; in other words they are involved in a cultural web which is one

of the major determinants of social action. Clearly, an effective approach to community organization must take account of the complex nature of the community, of its various dimensions—physical, biological, sociological, and psychological. Only on this basis is a realistic understanding of the community for action possible.

A realistic understanding requires us to recognize first of all that the community is a power structure. Somewhere it has a locus of authority. There are people in it who decide what many other people shall or shall not do, how they shall live and work, and many other fundamental matters.[1]

Closely linked to the fact of power is the fact that the community is stratified. Based on various criteria, the community has classes of people with varying ways of life correlated more or less closely with income and occupation. Monograph after monograph has shown that in American communities income and occupational status stratify behavior patterns and attitudes; different occupational positions are given definite social evaluations; and consciousness of social status is highly variable, but nonetheless universally significant. It is not necessary to review all the specific studies of named and anonymous communities which have provided these generalizations.[2] In general, the differences tend to be expressed in behavior, manifesting themselves, for instance, in relation to concepts of health and disease, to child-rearing practices, to nutritional behavior, and to associational patterns.[3]

A high degree of functional specialization, particularly in the larger communities, and the presence of various ethnic or racial groups may still further complicate the community structure. Under such circumstances the problem of communication and achieving consensus becomes more difficult, and may under given conditions result in conflicts. The difficulty here is not merely one of inadequate communication which can be corrected with patience and understanding, but that differing elements of the community may give rise to genuine conflicts of interest along economic, social, ethnic, or racial lines.

At this point two questions may justly be asked: Can a community of important interests be achieved in the face of such differences? The answer is that the existence of social complexity does not, or need not, prevent community organization, even though it does make the process much more complicated. What, then, are the implications of this approach for community organization? If we define community organization as the process by which the people and the health services and agencies of the community are brought together to learn about common health problems, to identify them as their own, to plan the kind of action needed to solve these problems, and then to act on this basis, the implications are clear.

First and foremost comes a knowledge of the community and its people. This knowledge must be acquired and is just as important for successful public health work as is a knowledge of epidemiology or medicine. The health officer, or the health educator, or the public health nurse, or the sanitarian should be consciously aware of the way of life of the people, their goals in life, the motivations that make them do the things they do, the things in life that mean much or little to them. In short, the first prin-

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ciple in community organization is to start with people as they are and with the community as it is.

A thorough knowledge of the community will help the health officer to determine what is compatible with economic, sociological, and psychological possibilities. But he will still have the problem of convincing the people of the need for action. His ideas of what is necessary may frequently not correspond with the felt needs of the people. Here is where an important and often difficult job of education for health must be carried out. Basically, the problem is to get people to discard ideas and habits that are sanctioned by usage and habit and to accept new ones that may be quite strange and seem to have no place in the accepted scheme of things. As both Drs. Burney and Macleod have indicated, the people with whom we work already have definite ideas which they feel are correct. Therefore, the people must see and be able to accept some reasons for the line of action they are expected to take. These reasons must, however, be compatible in some degree with larger prevailing systems. For example, Dr. Macleod's argument that "money well spent in health is an investment" will carry weight only in a money economy with a well developed business philosophy. This argument would carry no weight in a simpler economy where money was unknown. In this connection, it is worth noting that this type of argument originated in England in the seventeenth century with William Petty for political and economic reasons.

This approach implies also that educational programs must proceed in terms of the realities of human behavior, and that one should therefore not expect overnight miracles of change in a community. Much more lasting effects can be achieved by patient, assiduous effort on the part of the health officer or other health worker. As the Edinburgh Review put it in 1850: "Whoever seeks to enforce a Health Act must lay his account with waging incessant war."

One other point must be emphasized. The larger the community, the less the health worker can do in working directly with many individuals. This applies particularly to larger urban communities. Too often community organization is discussed with the village or small town in mind. The idea is fallacious that the inhabitants of large urban centers like New York or Chicago will act like persons in a small New England town accustomed to town meetings. Urban life is organized along lines of interest groupings, so that to a large extent community organization of city dwellers will not be alone on the basis of face-to-face relationships. Indirect contacts through organized groups play an important part. Here, again, we must emphasize the importance of understanding the community as structure and process.

Only to the degree that knowledge and approaches of the kind discussed are incorporated into the day-to-day activities of the health officer and other health workers will community organization be made a more effective tool. Ways and means must be devised so that health workers will have ready access to such data on a continuing basis. Here are exciting possibilities of interweaving theoretical insight with practical experience which no health worker can afford to overlook.

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Claude Bernard. From His First Lecture to the College of France, February 29, 1856

"Nor should experimental physiologists forget another very real service which Monsieur Magendie rendered them in his familiarizing, so to speak, of the general public with the idea of the scientific necessity of experimenting on living animals.

"There are always prejudices to be found in every period. For a long time the progress of anatomy was impeded by a superstitious awe of and respect for cadavers. In like manner physiology was shackled by a horror of experiments on living animals. During many years such experiments were tucked away and hidden from the public in the back corners of the institutions of learning. Today one can post in the streets of Paris announcements of courses in vivisection given in special buildings for that purpose. In England the prejudice still persists and is one of the great obstacles to the proper development of experimental physiology in that country.

"However, although as a vivisectionist Monsieur Magendie surmounted the common prejudice, he did not do so with ostentation. He would make it a point in his various courses to emphasize how and why the science of life processes necessarily based on living organisms had to make use of vivisection and why experiments of this kind, dominated and inspired by the scientific attitude, were no more deserving of being considered cruelty than the vivisections of surgeons motivated by the desire to save the life of a patient."—(From the Bulletin for Medical Research, Sept.–Oct., 1953)

Activities of the World Health Organization in the Eastern Mediterranean Region

ALY TEWFIK SHOUSHA, M.D.

To some health people the WHO still seems a vague, amorphous, faraway, misty sort of enterprise. This detailed recounting of the wide variety of down-to-earth services rendered in just one area of our globe may serve to dispel some of this mistiness.

✣ The habits, customs, attitudes of the people in the Middle East are often very different from those of North Atlantic communities. Some of these differences can be explained by the climate, e.g., North Atlantic communities are accustomed to plan things a year ahead because of the perennial necessity to survive the winter. This necessity does not exist in my region and the concept of long-term planning is therefore not widespread. Also, wherever there is water, even a little water, everything grows extremely rapidly and richly but, with the exception of very few places, there is no control over the supply of water, and the peasant has therefore become what you call a fatalist, since the only thing he can do about a drought is to suffer it.

The Eastern Mediterranean Region, which extends from Pakistan in the East to the new country of Libya in the West, from Syria and Persia in the North to Ethiopia in the South, probably contains about 170 million people. It should be an area of great interest, for it has been a crossroads of humanity since the beginning of history. The earliest known civilizations are still being dug up in the region. Monotheistic religion came from this region and it is necessary only to mention the art of writing, and to use the word chemistry, to indicate how much our North Atlantic civilization is in debt to the Eastern Mediterranean. For over one thousand years, a great deal of this region was politically unified under the Persian, Macedonian, and Roman Empires. For the first six centuries after Christ, much of the region was influenced by Christianity. Since then, the major influence in the region has been Islam which is today the major factor in the cultural unity of the region. Probably some 85 per cent of the population are Moslems, about 5 per cent are Christians of various denominations, some 1 per cent to 2 per cent are Jews.

It should be remembered that Islam carries with it a legal code called the "Sharia" which to a considerable extent regulates many aspects of life of Moslem communities and has considerable influence on the non-Moslem ones. With Islam goes the wide diffusion of the Arab tongue which was for several centuries a major medium for sciences and literature through the so-called dark ages in Europe. The most widely spoken languages, Arabic, Persian, and Turkish have many common features and until quite lately a knowledge of two or all of these languages was common among our educated people. Western civilization, of course, has affected mostly the parts of the region which are near shipping routes, the coast of the Mediterranean, Egypt, and Pakistan being much influenced by Western customs and practices. But in this same region you can find Yemen, Saudi

Arabia, and the Sheikdoms of the Oman in the Persian Gulf, which are still relatively unaffected. This Western influence has had much more effect on what one may call the policy-making classes of the population than on the artisans or peasants. The upper classes have much the same birth and death rates, life expectancy, standards of housing and education, as their counterparts have in Western countries, but it should never be forgotten that more than three-quarters of the people still continue to live very much as they did many centuries ago. The professional middle class, which plays such a large part in the affairs of Western countries, is comparatively undeveloped in this region. These remarks do not apply to Israel, because of the very large immigration into Israel of European middle-class people, e.g., Israel has one physician for about every 350–400 inhabitants while Iran has perhaps about one doctor for every 60,000.

About 80 per cent to 90 per cent of the whole region is desert, and the difference between the town and the country and the desert, for there are the three, is very much greater than it is in your North Atlantic communities. It should be remembered that the desert is not an uninhabited waste, but is frequently a kind of grazing steppe with extremes of temperature, very little rain, scanty vegetation. It is inhabited by a small population, for its size, of nomads. The countryside is restricted usually to narrow tracks beside the rivers and has hot summers and temperate winters, and very considerable productive capacity for its area. The urban population varies greatly from country to country, e.g., it is estimated at under 10 per cent in the Sudan and the Arabian Peninsula, about 40 per cent of the population of Lebanon, and perhaps 50 per cent of the population of Israel. The nomads are probably one-third of the population of the Arabian Peninsula, but they are a very small percentage of the people of Egypt and Lebanon.

By and large, statistical data for this region are inadequate and usually not reliable. Egypt, which is in many ways one of the best developed countries, has a census taken at ten-year intervals which is fairly accurate, but this cannot be said of any other country in the region. There are high birth rates and fairly high death rates, the latter falling. The rates of natural increase are going up, partly because of decreases in general mortality, particularly infantile and child mortality; these rates are still high by comparison to Western standards.

The nomads have developed to a high pitch the ability to live with their flocks and herds in their sparsely vegetated steppe and, as a natural outcome of this, they have a very special tribal form of organization with a high degree of individuality. To put it very simply, nomads are very difficult to organize. The idea of turning nomads into settled cultivators is by no means as simple as it sounds; but without any use of force, and with the provision of incentives such as water supplies from deep wells or other improvements in the fertility of the soil, peaceful settlement does take place. At the same time, it would be unwise to expect all the nomads to settle down, and it is doubtful whether it would be a good thing for the semiarid steppe if there were no nomads inhabiting it. Lastly, it is practically impossible to assess the standard of living of a nomad. They do not have newspapers, doctors, hospitals, police or lawyers, yet they have a complex, well established way of life with a highly developed folk culture, and relatively immense unwritten literature.

The next striking feature in the social pattern of this region is the village. Relatively far more people live in vil-

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lages than in towns when compared with Western countries. Most of the agricultural population of these villages live in great poverty and under most insanitary conditions. Usually the buildings are too close together, there is no sewage disposal system, and the water supply is not to be relied upon. Each village has its mosque, and in some cases a church, and many of the inhabitants will be found to be related to each other so that one has a kind of familial type of organization with a head man who nowadays is more likely to be elected than to hold a hereditary position.

The towns are the major industrial, educational, and cultural centers, but they are much further divided in their way of life from the villages or the nomads than is the case in Western countries, and there is usually a great difference in the attitudes of the town dwellers and the others. The rural population regards the town very often as the focus of everything desirable—so there is a considerable drift of people into the towns. Some of our towns have grown at a remarkable pace which has brought with it two very great difficulties in maintaining a reasonable sanitary level, provision of water supplies and maintenance of essential services.

The main achievement of modern public health methods in the Middle East has been in the control of pestilential diseases. Today, when these diseases reappear in epidemic form, they can be localized and stamped out by national health services with assistance, if necessary, from WHO—as Egypt did with an epidemic of cholera in 1947.

The fight against debilitating endemic diseases has begun, but thus far the most important successes have been against malaria, which has been almost entirely eliminated in Cyprus, confined to small areas in Israel and Lebanon, and brought under control in some districts of other countries. The village populations in most areas, however, are still burdened by a combination of such chronic illnesses as malaria, trachoma, bilharziasis, hookworm, and venereal diseases which shorten their lives and reduce their capacity for work. Most of the governments are planning to launch campaigns against these diseases, through use of insecticides, drainage of swamps and canals, provision of adequate waste-disposal systems and hygienic water supplies, and establishment of village clinics and dispensaries. In the majority of the countries concerned, such measures have reached but a small proportion of the population. In general, an appreciable improvement in the lot of the Middle Eastern peasant is inconceivable without the institution of a broad sanitation program.

Aside from the communities in which special health centers have been established, the nomadic and village population has practically no access to medical care, since there are very few physicians or hospitals outside the larger cities. In Iraq, for example, there was a population of 4,611,000 in 1945, and only 569 physicians; of these, 308 were located in the capital, Baghdad, which has less than 10 per cent of the population of the country.

In the Middle East, there is a basic and urgent need not only to train many more doctors, nurses, and public health officers, but also to develop a medical and health corps dedicated to rural services. The financial difficulties involved in developing such trained personnel, and in supporting their work among poverty-stricken villagers who cannot afford fees, constitute tremendous problems, as do the difficulties that arise from the fact that city-trained medical and health personnel are often reluctant to live and work in isolated "backward" villages where they can enjoy few of the amenities and satisfactions of life to which they are accustomed.

The nutritional level of the peoples in this region cannot be regarded as

satisfactory. Diet often consists mostly of cereals, pulses, vegetables, and very little animal or fish protein. There is usually a deficit in calories, in fats and proteins, and certain vitamins and minerals. Most of the governments are aware of these deficiencies and studies are under way to determine what can be done about it. There is some improvement in the general social welfare and social security; the giving of alms (zakat) is an inherent part of the Islamic culture, and poor families may derive from 5 per cent to 10 per cent of their income from the practice of zakat from their more wealthy neighbors. So the idea of social assistance is not new in this region and many of the social welfare departments in governments are extremely active and are gaining an increasing pull of the imagination of the governments concerned.

Two main trends can be seen in the health work of the World Health Organization in the Eastern Mediterranean Region, viz., assistance to governments in (1) the strengthening of public health services and (2) extending and improving educational facilities for medical and related personnel, including auxiliary health workers.

Both of these lines have been developed to fill needs made manifest by studies and surveys carried out since the Regional Office was opened in 1949. In many countries, health ministries are at an early stage of their history and the help of experienced public health officers during this expansion period is important. Then, too, training facilities are notably inadequate, especially in the public health field and WHO is concentrating on aiding governments to fill some of these deficiencies.

Public Health and Other Advisory Services to Governments

Public health officers have been appointed to assist a number of governments including those of Iran, Libya, Ethiopia, and Saudi Arabia. Jordan, Syria, and Lebanon are served by the Area Representative in Beirut and it is hoped to appoint a public health officer to Yemen before the end of the year. A lecturer in public health was assigned to the French University Medical Faculty in Beirut for one year, and two public health missions, composed of specialists from various countries, spent several weeks each in Egypt and Israel, studying government services and making recommendations. A number of public health surveys of selected areas in various countries have been made, and a health demonstration in the Calioub Area of Egypt is already operating based on WHO recommendations.

The Regional Office helps governments with advisory health services of all kinds by means of special consultants who are experts in their particular field of work and by missions composed of several highly qualified persons. Some of the surveys are very broad in scope like the bilharziasis survey which included the Sudan, Syria, Saudi Arabia, Somalia, Iraq, Iran, Yemen, Jordan, and Lebanon, and a mental health survey that was made of Iraq, Sudan, Egypt, Syria, and Lebanon. A food hygiene survey is in progress in Lebanon, Syria, Iraq, and Egypt and a nutrition survey was done some time ago of Syria, Lebanon, Jordan, and Iraq.

However, most special surveys involve only one country; cerebrospinal meningitis in the Sudan; leprosy in Ethiopia; cholera in Pakistan; nursing in Israel; mental health in Jordan; pellagra in Egypt; ankylostomiasis in Iraq; handicapped children in Lebanon; industrial health and occupational diseases in Iran and in Egypt; trachoma in Iran; bacteriology in Israel, and hospital services and organization in Egypt. A medico-legal consultant will go to Lebanon in the near future. Special missions along

the lines of the public health missions referred to above include a medical teaching mission to Israel and Iran; a thoracic surgery mission and a nurse-training mission to Israel.

Training and Fellowships

Education is an essential component part of the WHO approach to improvement of health services. The training of medical and other health workers is done in four ways: (1) by developing instructors and administrators, (2) by training doctors, nurses, public health engineers and sanitarians, (3) by granting long-range fellowships for undergraduate students, and (4) by training auxiliary health workers as a short cut to overcome immediate and serious shortages of personnel.

This has led to the appointment of visiting professors of physiology and pathology to Dow Medical College, Karachi; a lecturer in parasitology to the Royal Medical College in Baghdad; a lecturer and research worker in virology (especially trachoma) to the Giza Ophthalmic Memorial Hospital in Egypt; the appointment of a lecturer in public health to the Medical Faculty of the French University in Beirut; the appointment of a public health expert to aid in the establishment of the new department of public health at the American University of Beirut and to act as director for the two first years; the appointment of instructors to the Ashraf School of Nursing in Teheran; of instructors for the University Nurse Training School in Damascus. A regional college for nursing which is to be started in Egypt this year has also been planned. The training of community health visitors in connection with MCH projects in Peshawar, Dacca, and Lahore (with similar projects in Karachi, Baghdad, Jordan, and Libya to begin this year) has been organized; a comprehensive training scheme for community health visitors and sanitary aides for Ethiopia has been developed and a number of individual fellowships in undergraduate medicine have been awarded to students from such countries as Libya, Ethiopia, and Saudi Arabia where there are no medical schools. Also many fellowships for postgraduate study of subjects from anaesthetics to zoonosis have been arranged.

The seminar is another form of training being used of which the Regional Eye Diseases Seminar in conjunction with the Jubilee Meeting of the Egyptian Ophthalmological Society is an example for which ten fellowships were awarded to ophthalmologists from different countries in the region. A joint WHO/FAO nutrition seminar was held in Cairo in 1950 and a training course in vital and health statistics, in which WHO cooperated, was given in 1951 with fellows attending from eight countries. A Regional Mental Health Seminar is to take place this year in Beirut.

Health Education of the Public

It is recognized that health education is an urgent need in this region and that this must be combined with practical demonstrations to have effect. Health educators are being appointed in a number of countries; for example, in the recently completed VD demonstration project in Egypt. Health education of the public has been initiated in Libya with the appointment of two Arabic-speaking girls to begin on the problem of the health education of women. WHO is also participating in the Arab States Fundamental Education Project at Sirs-El-Layyan, Egypt, and has supplied a public health adviser and a health educator to the project, while the adjoining Calioub Health Demonstration Area will provide practical field work for the students. A health educator is also working with the bilharziasis control project in Egypt.

Maternal and Child Health

Demonstrations of modern methods in care of maternal and child health, including teaching of domestic midwifery and minor pediatrics, are in progress in a number of countries. One project in Lahore (Pakistan) has already terminated its international phase after two and one-half years of work. Projects are in operation in Lebanon, Syria, Pakistan, and others will be started this year in Iran, Iraq, Karachi, Pakistan, Jordan, and Libya. It is also planned to help the midwifery school in Teheran. In addition, WHO is helping in the designing and equipping of the Children's Hospital in Karachi which is being financed by the government with UNICEF.

Nursing

The growing realization of the need of really good nursing services has led to the appointment of nursing officers to the Governments of Lebanon, Pakistan, Syria, and Libya (during 1952). Similar help is planned for Egypt in the near future. Egypt also will be host to the Regional Nursing College which is intended to provide nurses qualified to fill supervisory and teaching posts. WHO has already provided instructors for nursing schools in Syria, Iran, Israel, and East Pakistan.

Nutrition

With an eye on the expansion of the study of nutrition in the region, a joint WHO/FAO nutrition training center was held in Cairo in 1950 with 36 trainees from various countries. Nutrition studies by special consultants have been made in Iran, Iraq, Syria, Lebanon, and Egypt and pellagra has been surveyed in Egypt.

Environmental Sanitation

Although it has not been financially possible to develop many projects dealing specifically with environmental sanitation, this aspect of health has not been neglected. For example, it is an integral part of health demonstration areas, of insect control, epidemic disease control, and MCH work. The regional adviser in environmental sanitation has also given advice on sanitation problems in such projects as cholera control in Pakistan and bilharziasis control in Egypt; in joint malaria and bilharziasis projects in Syria; in malaria in Lebanon, Iraq, Syria, and Saudi Arabia; in the trachoma pilot project in Egypt; and the insect control project in Iran.

The American University of Beirut, using TCA funds, has helped with the training of sanitarians, and a regional public health engineering training project is being actively considered. In addition, a regional study of the importance of the fly as a health menace was made by a special consultant, and in the last three years 27 fellowships have been awarded to study environmental sanitation.

Control Measures Against Various Diseases

Malaria and Bilharziasis — Malaria control projects are under way in Lebanon, Iraq, Syria, and Saudi Arabia. The successfully completed international project in Iran is now being carried on by Iranian members of the demonstration team with the technical advice of WHO and financial assistance from TCA. The project in Pakistan, completed by WHO, is being extended by the national team with DDT from UNICEF. A proposed regional training project for malaria workers, to be held in Egypt, has had to be postponed until next year.

Egypt and Pakistan are now building DDT plants with TA funds and part of the production will be utilized for public health purposes. A joint project to

control both malaria and bilharziasis has just been initiated in the Jezirah district of Syria.

The extent of the bilharziasis problem in the region has warranted the special attention of a team of experts, who studied the situation in Iran, Saudi Arabia, Jordan, Syria, Sudan, Somalia, Yemen, Eritrea, and Ethiopia. In Egypt a coordinated project is under way that combines snail destruction, treatment of cases, health education, and environmental sanitation. A similar project combining malaria and bilharziasis control is starting in Syria. In Egypt, too, new snail killing chemicals are being tried out to determine their relative effectiveness. We do not know everything about bilharziasis yet, but we are learning.

Trachoma—The high incidence of this eye disease has been the object of special studies for some time but difficulties have been encountered in devising a practical method for mass campaigns. A pilot control project is to be undertaken in Calioub Health Demonstration Area which may indicate the best approach for other countries of the region. In the meantime, a lecturer and research worker in virus diseases, in particular trachoma, has been appointed to the staff of the Giza Ophthalmic Memorial Hospital. A survey of trachoma has also been made in Iran.

Venereal Diseases and Leprosy—The first venereal disease control project was carried out in Egypt and is now completed. Besides demonstrating control methods it provided training for serologists, nurses, laboratory technicians, and social workers from Egypt, Pakistan, Lebanon, and Syria. Similar projects are now under way in Pakistan, Saudi Arabia, Iran, and Ethiopia. A bejel-syphilis control project has been completed in Iraq and another will soon begin in the adjoining country of Syria where health conditions are, in many ways, similar.

A leprosy survey was made in Ethiopia in 1950 and on the basis of the recommendations it contained, a demonstration of leprosy control took place there during 1952. A similar project is now planned for Iraq.

Tuberculosis—The attack on this disease is twofold, through demonstration and training centers for control of tuberculosis and by BCG vaccination campaigns largely financed by UNICEF, which are now being integrated with the work of the TB centers. The first, in Turkey, was a great success, and new centers have now been opened in Syria, Egypt, and Dacca and Karachi in Pakistan. Others are due to open soon in Iran, Iraq, Israel, Jordan, and Ethiopia. BCG antituberculosis vaccination campaigns have already been completed in Aden, Syria, and Egypt, and BCG vaccination has been established as a national service. Campaigns are operating with international help in Ethiopia, Libya, Pakistan, Iraq, and Iran and a survey of needs has been made in Saudi Arabia.

Cerebrospinal Meningitis — Plans to help control the annually recurring epidemics of cerebrospinal meningitis in the Sudan have been made, but lack of funds so far have prevented their execution. A study of the situation was made and experimental work done by a special consultant and Regional Office staff members.

Zoonoses—A rabies control project in Israel was carried out in 1950 and is being continued by the government, and other forms of zoonoses are also receiving attention in Israel. Fifteen fellows from the countries of the region attended the rabies seminar in Coonoor, India, to learn laboratory technics.

Rehabilitation of Physically Handicapped Children—In Lebanon a model center for the treatment and education of physically handicapped children is being set up with the cooperation of UNICEF and TCA and will be used as

a regional training center. Two physiotherapists and special equipment for a training school for the rehabilitation of polio victims are being provided to Israel, also with the help of UNICEF. WHO is associated with TA and ILO in a Regional Center for the Rehabilitation of the Blind in Egypt.

Mental Health—The mental health surveys have been made in Egypt, Iraq, Lebanon, Syria, the Sudan, and Jordan and certain recommendations already put into effect. Later in the year a regional seminar to study the development of mental health education along modern lines will be held in Lebanon.

School Health—Fellowships to study school health systems of Denmark and the Netherlands were awarded to a group of students from Egypt, Iran, Iraq, Israel, Jordan, Lebanon and Syria, while in Syria a pilot project for favus control among school children is to begin in 1954 with UNICEF's help.

Epidemiologic Intelligence Service

The Regional Office in Alexandria is one of four centers in the world for the collection and dissemination of epidemiologic information and quarantine notifications which are then transmitted twice weekly by radio in a new code compiled by WHO. The Regional Center also settles disputes that arise in the application of the new International Sanitary Regulations and collects health data on the Mecca pilgrimage. In this connection aid is being given by WHO in the equipping and staffing of the new quarantine station at Jeddah which is being erected by the Saudi Arabian Government.

Public Health Laboratories

To reinforce growing public health services, aid is being given to develop public health laboratories in several countries. In Jordan, the Public Health Laboratory in Jerusalem is already operating; help will be given to Israel to expand an existing laboratory, while Iran and Lebanon are in the planning stage. The latter is being established principally with funds made available from the TCA.

Changes in First Aid Technics

In a new supplement to the American Red Cross First Aid Textbook, two major changes in first aid care are announced. These were adopted by the Red Cross on recommendations by the Committee on Surgery of the Division of Medical Sciences, National Research Council. It is now recommended that a tourniquet be used only for severe life-threatening hemorrhage that cannot be controlled by other means, that it be applied close to the wound, with unbroken skin between it and the wound; and that it remain undisturbed until released by a physician.

In frostbite or prolonged exposure to cold, rapid warming is recommended instead of the previously approved gradual thawing out of a frozen part in cool water or in a cool room. The victim is to be brought into a warm room as quickly as possible and placed in a tub of warm, not hot, water or wrapped in warm blankets. Rubbing of the frozen part is not recommended, but, after the part is rewarmed, the victim should be encouraged to exercise fingers and toes. The supplement also includes the technic for the back-pressure-arm-lift method of artificial respiration, adopted by the Red Cross in 1951. Free copies of the supplement may be obtained through local Red Cross chapters.

Immunogenicity Studies in Human Subjects of Trivalent Tissue Culture Poliomyelitis Vaccine Inactivated by Ultraviolet Irradiation

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This study emphasizes the importance of critical safety tests for an inactivated poliomyelitis vaccine and the necessity for proving the safety of such material which is to be used in man. The findings presented herewith indicate that a poliomyelitis virus grown in monkey tissue culture can be inactivated by ultraviolet irradiation, and that such an inactivated polyvalent vaccine produced a consistent and significant rise in antibody titer of human volunteers to the three types of poliomyelitis virus.

✣ In 1945, Milzer, Oppenheimer, and Levinson [1] first demonstrated that the Lansing strain of Type 2 poliomyelitis virus completely inactivated by ultraviolet light still retained sufficient antigenicity to immunize mice. We also demonstrated that there was a quantitative and parallel relationship between the antibody titer of the sera of vaccinated mice and resistance to intracerebral inoculation. These results have been confirmed by others with Type 2 poliomyelitis virus inactivated by formalin, ultraviolet light, or high intensity electron bombardment for cotton rats and mice,[2-5] monkeys,[6, 7] and chimpanzees.[8] In 1952, Howe [9] demonstrated antibody formation to the three types of poliomyelitis virus in chimpanzees and six human beings immunized with a formalin-inactivated trivalent poliomyelitis vaccine prepared from infected monkey spinal cord suspensions.

The very significant observation by Enders, Weller, and Robbins [10] that the three types of poliomyelitis virus will multiply in human non-nervous tissues in vitro has removed the objection to a poliomyelitis vaccine containing nervous tissue which might produce postvaccinal paralytic accidents. The subsequent demonstration [11] that monkey tissues, especially kidneys and testis, can provide an in vitro culture medium suitable for multiplication of all three immunological types of poliomyelitis virus has made it possible to prepare relatively large amounts of virus suitable for vaccine production. The virus which is cultured in non-nervous tissue is obtainable in a concentration equal to or exceeding that present in infected monkey nervous tissue. In 1950, Milzer, et al.,[12] showed that intraperitoneal injection of Type 2 tissue culture virus in mice conferred some degree of protection to subsequent intracerebral inoculation of mice. This observation was confirmed in 1951 by Enders [13] who reported partial protection following intramuscular inoculation of mice. In the following year Salk, et al.,[14] noted that tissue culture virus incorporated in Freund's mineral-oil adjuvant enhanced antibody response in monkeys inoculated intramuscularly. Furthermore, it

was claimed that culture virus treated with formalin in minimal concentrations sufficient to destroy infectious activity was antigenic. More recently, Salk, et al.,[15] in a preliminary report of work in progress stated that the inoculation of human subjects with a combined vaccine prepared with mineral oil adjuvants and containing the three types of formalin inactivated virus is followed by the development of antibodies against the three virus types. It was noted that the immunogenic response in the subjects vaccinated approximates that produced by natural infection with the virus.

It is the purpose of the present paper to present data obtained from the vaccination of 30 adult volunteers with a mineral oil adjuvant trivalent tissue culture poliomyelitis vaccine inactivated by ultraviolet irradiation. In addition, data on a limited number of adult subjects vaccinated with aqueous irradiated trivalent tissue culture vaccine are also presented.

Material and Methods

The vaccines used in these studies were prepared from virus propagated in roller tube cultures of monkey kidney tissues. The virus strains were propagated in 300 ml. bottles rotated in a roller drum containing the protein-free nutrient medium described by Melnick and Riordan.[16] The medium used contained lactalbumin enzymatic hydrolysate, serum ultrafiltrate, and balanced salt solution. The final vaccine contained 19.6 milligrams per cent protein nitrogen and was preserved with 1:10,000 merthiolate. The three strains * of virus selected to represent the three types of poliomyelitis were as follows:

1. Mahoney strain for Type 1
2. MEF-1 strain for Type 2
3. Saukett strain for Type 3

* We are indebted to Dr. Jonas Salk for supplying the three strains of virus.

Table 1 contains titration data relative to the pools of virus used in the preparation of the irradiated trivalent vaccine for human use. Each strain of virus was grown individually, titrated, and its identity was checked with type specific antiserum obtained from several different laboratories. All virus titrations and serum neutralization tests were carried out in roller tube cultures of monkey kidney. The virus pools were prepared by pooling the first four supernatants and each virus type pool was inactivated by ultraviolet irradiation separately.

Table 1—Titrations of Pools of Polio Virus Used in Human Vaccination Studies *

Virus Strain	Pool No.	Titer Neg. Log of 50% End Point
Mahoney	TC 72	5.14
MEF-1	TC 72	4.1
Saukett	TC 72	5.58
Mahoney	TC 75	4.22
MEF-1	TC 75	5.0
Saukett	TC 75	3.04

* Viruses were propagated in monkey kidney and titrated in cultures of monkey kidney.

Preparation of Ultraviolet Irradiated Trivalent Poliomyelitis Vaccine—Irradiation titration experiments were carried out to determine the minimum amount of energy needed to completely inactivate each virus type. Prior to irradiation each pool of virus was rou-

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tinely tested for sterility in a variety of culture media and centrifuged in order to remove tissue particles and other debris. On the basis of numerous experiments it was established that there was no significant difference in the amount of ultraviolet energy needed to inactivate each virus type. The irradiation was carried out in two centrifugal filmers (Levinson-Oppenheimer) connected in series with a film thickness of 25 microns at a flow rate of 200 ml. per minute. The total exposure time was two seconds. The ultraviolet energy concentrated in 2537 AU absorbed by the film was measured to be 4×10^{-6} Einstein per ml.

Table 2—Safety Tests of Irradiated Tissue Culture Poliomyelitis Vaccine

1. Repeated intracerebral and intraperitoneal inoculation of monkeys.
2. Tissue culture inoculation including subculture.
3. Photoreactivation.
4. Bacterial sterility tests.

Safety Tests of Ultraviolet Irradiated Poliomyelitis Vaccine—We felt that very critical safety tests for complete inactivation were essential because of the questionable safety of chemically inactivated poliomyelitis vaccines studied in the past.[17, 18] As long ago as 1930 Shaughnessy, Harmon and Gordon,[19, 20] showed that heated virus which is innocuous in a single injection may produce clinical symptoms of poliomyelitis on repeated injections. For this reason the criteria of safety tests for inactivated tissue culture poliomyelitis vaccine shown in Table 2 were rigidly followed for each lot of vaccine prepared. First, six monkeys were inoculated intracerebrally with one ml. of the undiluted tissue culture vaccine on two occasions at 48-hour intervals. In addition, each monkey received 10 ml. of undiluted vaccine intraperitoneally. This procedure was followed because previous workers[19-21] have shown that multiple intracerebral and intraperitoneal injections are more effective in detecting subinfective amounts of virus. The monkeys were observed daily for signs of poliomyelitis including temperature rise and sacrificed on the twenty-first day after inoculation. Sections were prepared from the brain, pons, medulla and cervical and lumbar cords, and each section was carefully examined for histopathologic evidence of poliomyelitis infection. Second, at least 20 tissue culture tubes were seeded with the undiluted vaccine containing no merthiolate. This was done because we have found tissue culture inoculation a very sensitive technic for detecting subinfective amounts of virus. Four to eight days after incubation a subculture was made of the tissue culture tubes in order to detect a possible interference phenomenon between large amounts of inactivated virus and traces of active virus.[22, 23] In fact, we were able to detect active virus by subculture in titration experiments when borderline amounts of irradiation were employed.

In addition to the above tests, photoreactivation studies were carried out using Kelner's technic[24] in order to detect incompletely inactivated virus. This was done because in previous work[25] we observed the reactivation of bacterial suspensions when a very low viable count was present following ultraviolet irradiation; however, no photoreactivation could be demonstrated if the bacterial suspensions were shown to be sterile by critical sterility tests prior to photoreactivation. Photoreactivation of several lots of irradiated trivalent tissue culture vaccine were carried out using Kelner's technic and these vaccines were shown to be inactivated by both monkey and tissue culture inoculation including subculture of the latter.

Experimental Results

Thirty normal adult volunteers with no previous history of paralytic poliomyelitis were vaccinated with trivalent tissue culture vaccine inactivated by ultraviolet irradiation and emulsified with mineral oil adjuvant. The adjuvant was prepared according to Salk's technic [15] and consisted of "Drakeol No. 6" and "specially purified Arlacel A similar to that supplied to Dr. Salk" and obtained through the courtesy of the Atlas Powder Company. The purified mineral oil adjuvant was mixed with equal parts of the trivalent tissue culture fluid and injected intramuscularly in 1 ml. amounts. Each ml. of the vaccine contained 0.17 ml. of each of the three virus types. One month later a second injection of 1 ml. of aqueous vaccine consisting of equal parts of the three virus types was injected intramuscularly. Blood specimens were collected before vaccination and two weeks after the second inoculation of the vaccine. Each serum was stored in the refrigerator at 4–6° C. until tested.

Antibody titrations were made in monkey kidney tissue culture tubes. Pre- and postvaccination serum samples were routinely tested simultaneously. The virus inoculum for each culture contained 100 50 per cent tissue culture infecting doses ($TCID_{50}$) in final mixture with each dilution of serum similar to the technic of Ledinko and Melnick.[26] Serial dilutions of serum beginning with undiluted (1/1), 1/5, 1/10, etc., were mixed with equal volumes of virus suspension and inoculated into two or three tubes per serum level. Each tube was read as an unknown independently by at least two technicians. Titers are expressed as the 50 per cent end point and represent the dilution of serum that was added to the virus before inoculation of the tissue culture tubes.

There was no evidence of either local or general reactions which could be attributed to the inoculations in any of 52 subjects inoculated with the mineral oil adjuvant or aqueous vaccine other than some local induration and tenderness at the site of the inoculation with the adjuvant vaccine which persisted for about four or five days; those inoculated three times with aqueous vaccine had only a slight erythema which persisted for a few hours. No monkey antikidney precipitins were detected in several random serums showing a fourfold or greater rise in virus antibody titer, both of individuals injected with adjuvant vaccine plus two or three additional inoculations of aqueous vaccine (1 ml.) and others given three inoculations of aqueous vaccine only. Urinalysis of 12 of the subjects were normal when tested approximately at the time of the last blood specimen. Three of four guinea pigs inoculated with either the adjuvant or aqueous vaccines (1 ml. intraperitoneally) failed to develop a typical anaphylactic reaction when given a shock dose of aqueous vaccine on the tenth day (2 ml. intraperitoneally). One guinea pig injected initially with adjuvant vaccine developed slight anaphylactic-like signs of a mild degree but recovered completely in about 20 minutes.

Prior to vaccination 19, or approximately 63 per cent, of the 30 subjects studied possessed antibodies to the three virus types. An additional eight or approximately 27 per cent had antibodies for two types, chiefly Types 2 and 3; only 3 or 10 per cent had antibody for one type.

Antibody Response to Type 1 Component of Ultraviolet Irradiated Vaccine—Titration data for Type 1 antibody level before and after vaccination with trivalent adjuvant vaccine for 30 subjects are shown in Table 3. Prevaccination titers are shown in the horizontal line and the postvaccination titers are represented in the vertical line. The symbol

Table 3—Antibody Response to Type 1 Polio Virus in 30 Human Subjects Vaccinated with Irradiated Trivalent Tissue Culture Vaccine Plus Adjuvant

Postvaccination Titer	<1/1	1/1	1/5	1/10	1/20	1/40	1/80	1/160
1/160	..	..	1	..	1	2	..	..
1/80	..	2	..	2	4	1	..	..
1/40	..	1	1	2	..	2	..	..
1/20	..	..	..	..	1	..	..	..
1/10	..	..	..	..	..	..	..	..
1/5	3	..	3	..	..	..	..	..
1/1	..	..	..	..	..	..	..	..
<1/1	4	..	..	..	..	..	..	..

Prevaccination Titer

<1/1 indicates that no antibody was detected in undiluted serum. We feel that it is significant that 63 per cent of the individuals developed a fourfold or greater rise in their postvaccination serum titers. It is especially worth noting that three subjects with no detectable antibody in their undiluted prevaccination serums developed demonstrable type-specific antibodies in their postvaccination serums. Ten, or 33⅓ per cent, of the subjects failed to develop any rise in Type 1 antibody titers.

Antibody Response to Type 2 Component of Ultraviolet Irradiated Vaccine—Antibody response to Type 2 virus in the same serum specimens of the 30 human subjects vaccinated with the trivalent adjuvant vaccines are shown in Table 4. All of the subjects except five developed a significant rise in antibody titer (fourfold or greater) against Type 2 virus. Four subjects failed to show any rise in antibody titer and one showed only a twofold rise. Only one subject in this series had no detectable Type 2 antibodies in the prevaccination undiluted serum specimen but developed a postvaccination antibody titer of 1/20.

Antibody Response to Type 3 Component of Ultraviolet Irradiated Vaccine—The antibody response to Type 3 poliomyelitis virus in the same serum

Table 4—Antibody Response to Type 2 Polio Virus in 30 Human Subjects Vaccinated with Irradiated Trivalent Tissue Culture Vaccine Plus Adjuvant

Postvaccination Titer	<1/1	1/1	1/5	1/10	1/20	1/40	1/80	1/160	1/320
1/1280	..	..	..	..	..	..	..	..	1
1/640	..	..	..	..	..	..	..	..	..
1/320	..	..	..	..	..	1	3	..	..
1/160	..	..	..	..	3	4	..	..	..
1/80	..	..	1	2	2	..	..	..	..
1/40	..	..	1	4	..	..	..	..	..
1/20	1	2	..	1	1	..	..	..	..
1/10	..	..	..	1	..	..	..	..	..
1/5	..	..	2	..	..	..	..	..	..
1/1	..	..	..	..	..	..	..	..	..
<1/1	..	..	..	..	..	..	..	..	..

Prevaccination Titer

Table 5—Antibody Response to Type 3 Polio Virus in 30 Human Subjects Vaccinated with Irradiated Trivalent Tissue Culture Vaccine Plus Adjuvant

Postvaccination Titer	<1/1	1/1	1/5	1/10	1/20	1/40	1/80	1/160
1/160	..	1	1	1	1	2	..	..
1/80	..	1	..	6	4	..	..	..
1/40	..	1	1	4	..	..	..	..
1/20	..	..	..	..	..	..	..	..
1/10	..	1	..	2	..	..	..	..
1/5	3	..	1	..	..	..	..	..
1/1	..	..	..	..	..	..	..	..
<1/1	..	..	..	..	..	..	..	..

Prevaccination Titer

specimens of the 30 vaccinated human subjects is shown in Table 5. Here again there was a fourfold or greater rise in antibody titer in 27 of the 30 serums tested. Three of the subjects failed to show any rise in antibody titer. Three had no detectable antibodies in the prevaccination serums but developed a titer of 1/5 in the postvaccination serum.

Antibody Response to Aqueous Vaccine—The antibody response of four subjects to the three types of poliomyelitis virus following vaccination with three 1 ml. injections of trivalent aqueous irradiated vaccine given at biweekly intervals is shown in Table 6. The postvaccination serum titers shown were obtained in specimens of serum drawn two weeks after the last inoculation of vaccine (six weeks after the initial vaccination). Of the four subjects who received aqueous vaccine, two had antibodies to the three virus types prior to vaccination. One subject had antibody to two virus types and one had antibody to one type only. Although the data in Table 6 are based on antibody titrations of only four individuals, we feel that it is noteworthy that there was a fourfold or greater rise in antibody titer to the three types of polio-

Table 6—Antibody Response to Three Types of Poliomyelitis Virus in Four Subjects Vaccinated with Aqueous Poliomyelitis Trivalent Tissue Culture Irradiated Vaccine

Postvaccination Titer	<1/1	1/1	1/5	1/10	1/20	1/40	1/80	1/160
1/320	..	..	..	..	..	†	..	..
1/160	..	‡	..	..	*†	†	..	..
1/80	..	..	..	..	**	..	..	..
1/40	..	..	..	‡‡	..	..	..	..
1/20	†	..	..	..	..	..	..	..
1/10	..	..	..	..	..	..	..	..
1/5	*	..	..	..	..	..	..	..
1/1	..	..	..	..	..	..	..	..
<1/1	‡	..	..	..	..	..	..	..

Prevaccination Titer

* Type I Antibody, † Type II Antibody, ‡ Type III Antibody.

myelitis virus except in one subject who failed to develop any rise in antibody titer to Type 3 virus.

Discussion

Our apparently totally inactivated vaccine produced a consistent and significant rise in antibody titer to the three types of poliomyelitis virus in most of the 30 vaccinated subjects. The lowest antibody response occurred to the Type 1 component of the vaccine; 63.3 per cent developed a fourfold or greater rise in antibody titer compared to 83.3 per cent for Type 2, and 90 per cent for Type 3. No significant local or generalized reactions were encountered in a total of 52 subjects, chiefly adults, vaccinated with either the adjuvant or aqueous vaccines. Furthermore, we were unable to detect the presence of antimonkey kidney precipitins [27] in the serums of several subjects who developed the highest postvaccination antibody titers for the three virus types.

Although the number of individuals who received the aqueous vaccine only is small, the fact that there is some indication that the response is comparable to the adjuvant vaccine is encouraging. We plan to increase our series with this type of vaccine in the near future.

Although a few individuals showed no antibodies in their undiluted serums for one of the three virus types and subsequently developed a significant rise in postvaccination titer, we must keep in mind that their serums were tested against 100 50 per cent tissue culture infecting doses and it may well be that lower levels of antibodies were present and the response in these individuals cannot necessarily be inferred to be a primary immunization.

We agree with Sabin's [28] suggestion that no strain of poliomyelitis which is highly paralytogenic after intramuscular injection should be used in the vaccine. For this reason we plan to substitute a nonparalytogenic strain of Type 1 virus in future vaccination experiments.

Serum neutralization tests on infants and children are now under way and it is planned to immunize those who show no antibodies in order to determine the effectiveness of the irradiated vaccine in producing primary immunization. It is our belief from the work we have done that the antigenic content of the irradiated vaccine which we have used has been minimal and that in future work efforts should be made to increase the antigenic content either by improved methods for growing virus [29] or by concentration.

That technic of virus inactivation which causes the least antigenic destruction should be given prime consideration. We believe that ultraviolet irradiation offers a promising method for inactivation because in other work we and others [30, 31] have demonstrated a relatively wide margin of safety between complete inactivation and antigenic decrease because of the inactivation technic. One reason we have favored ultraviolet is because its effect is at the time of inactivation and there is not a continuous action as in the case of some types of chemical inactivation.

High levels of humoral antibody do not seem to be necessary to achieve protection against naturally acquired poliomyelitis infection as shown by the effectiveness of passive immunity.[32] In such passive immunity the antibody levels have only been on the order of those demonstrable in undiluted serum.[33]

Human vaccination studies should be carried out only when the incidence of poliomyelitis is minimal. Before undertaking a field study to evaluate a poliomyelitis vaccine, we feel that it would be advisable to proceed cautiously in order to be certain that there are no ill effects and that no risks are taken for we must avoid the tragic consequences

that have sometimes accompanied poliomyelitis vaccine research on human subjects in the past.[17]

Conclusions

1. By means of ultraviolet irradiation it is possible to completely inactivate all three types of poliomyelitis virus grown in tissue culture. Inactivation was proved by critical safety tests which included both repeated monkey and tissue culture inoculation.

2. The local and general reactions produced by the ultraviolet irradiated vaccine with or without the mineral oil adjuvant were minimal.

3. The ultraviolet inactivated trivalent vaccine produced a consistent and significant rise in antibody titer to the three types of poliomyelitis virus in most of the human volunteers studied.

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Epidemiological Studies on Influenza in Familial and General Population Groups

I. Preliminary Report on Studies with Adjuvant Vaccines

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There is much more to this paper than additional evidence that some protection against influenza is rendered by vaccination when attacking virus and antigen are of the same type. It makes usefully clear to all health workers some of the difficulties under which research must be conducted.

✣ These studies, of which only one phase can be reported here, were undertaken to secure definitive information on the public health importance, epidemiology, and clinical characteristics of influenza as it occurs in general population families, as well as to evaluate the effectiveness of recently developed "water-in-oil" adjuvant vaccines. The studies were initiated in 1951 in Norfolk, Va., and expanded in 1952 to include families in Arlington, Va. During the course of study, 4,362 people were inoculated with adjuvant monovalent influenza vaccines. The majority of these persons and unvaccinated members of their families have been observed at regular intervals to the present time for the occurrence of acute febrile respiratory illnesses. A small outbreak of influenza B occurred in February and March, 1952, and outbreaks of influenza A occurred in January and February, 1953, in the populations under observation. This report is limited to discussion of occurrence of acute febrile respiratory illnesses and specifically diagnosed influenza in vaccinated persons during the two epidemic periods. To date not all samples have been tested for virus. The studies are continuing and subsequent reports will discuss the household occurrence of such illnesses as well as other phases of the program.

The studies of Salk and his coworkers [1-4] have shown that the water-in-oil adjuvant influenza vaccines produce serum antibody levels which are higher and more durable than those evoked by aqueous vaccines. Furthermore, smaller quantity of antigen is required and antibody response is probably broader in respect to the different components of the strain as tested by hemagglutination inhibition. Data [5, 6] are available to indicate that neutralization and hemagglutination inhibition antibody levels may measure immunity of individuals to influenza virus, but the ultimate evaluation of vaccines is on the basis of preventing influenza disease in man.

In this study four adjuvant vaccines, each containing one strain of killed influenza virus, namely: A/PR8, A/FW/1/50 (Cuppett), B/Lee and B/Virginia/1/50 (1210), were prepared by Parke, Davis and Company for our use. One 0.25 ml. dose containing 100 CCA units of antigen was given intramuscularly. Vaccine given in 1951 contained 50 parts virus suspension, 45 parts Bayol F, and 5 parts Arlacel A

which were packaged in 20-dose vials and emulsified immediately prior to use. Vaccines given in 1952–1953 contained 50 parts virus suspension, 48.5 Drakeol No. 6, and 1.5 parts Arlacel A. These were emulsified at the time of manufacture and packaged in single-dose disposable cartridges. All persons who volunteered received one of these four vaccine products. Each vaccine was assigned in rotation to the first household member attending the clinic and again in rotation to the other members of that household. This assured random vaccine distribution and the widest possible diversification within each household.

Subsequent to vaccination, biweekly communication with each family was carried out as regularly as possible. All persons with active febrile respiratory illnesses which were reported were visited by a physician who obtained throat washings and swabs from the sick individual and all available members of his family. Usually two or three follow-up visits were made within 10 days for additional samples from the initial case or other members of the family who had become ill during the interim. Blood samples were taken from all possible members at the time of onset of the first illness and 20–30 days later. Throat swabs and washings in sterile bacteriological broth or skim milk were quickly frozen and stored at —50° C. and serum samples were also stored in the frozen state.

In these studies evaluation of the effectiveness of vaccines was measured by two criteria of diagnosis. The first criterion was the incidence of acute febrile respiratory illnesses occurring during the period when influenza virus was present in vaccinated populations. Febrile respiratory illness was defined as any departure from normal health characterized by suspected fever or known temperature elevation above 98.9° orally, or 99.9° rectally, and accompanied by symptoms implicating the respiratory tract. The second criterion was diagnosis by recovery and identification of influenza virus from individuals with respiratory illnesses.

Virus was isolated by amniotic inoculation of throat washings into 11-day-old embryonated eggs. The lungs, amniotic and allantoic fluids were harvested after five days incubation and repassaged. During the outbreak of influenza B, third passages were made before specimens were considered negative. Allantoic and amniotic fluids from each egg were tested for capacity to agglutinate chicken and guinea pig erythrocytes and if positive were typed with rooster antisera against A/PR8, A/FW/1/50, B/Lee, and B/Va./1/50 strains and in 1953 against A/Va./1/53, a strain isolated in Arlington.

Many previous studies [7–15] have evaluated influenza vaccines by clinical definition of influenza. This criterion of diagnosis gives a general measurement but may include many cases of respiratory disease not caused by influenza virus and thus masks the protective effects of vaccination. Other studies [16, 5, 6] utilized diagnostic criteria of febrile respiratory illness plus serological evidence of specific infection.

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This criterion has advantage of limiting cases to those having specific laboratory evidence of infection with influenza virus, but the possible disadvantage of relying upon serological results from persons immunized with a specific antigen. Although a rise in titer of acute and convalescent serum has been demonstrated in vaccinated individuals, it is possible that such rise occurs chiefly in those who had poor antibody response to the immunization. In persons having good antibody response to immunization it would be conceivably more difficult to demonstrate rises and thus might eliminate as a diagnosed case an individual actually ill with the disease but not giving evidence of it serologically. As has been observed by other workers,[6] influenza A virus was recovered during these studies from 22 of 71 ill individuals not showing fourfold or greater rises in hemagglutination-inhibition titers to the strain prototypic for the epidemic.

Because of the difficulties of serological diagnosis in adjuvant vaccinated individuals, in whom the antibody response is so enhanced, we selected as our second criterion the isolation of influenza virus from individuals ill with respiratory illness. Although influenza virus has been recovered by others from well individuals,[17] these instances are not common and it seems reasonable that isolation of influenza virus from persons with respiratory symptoms is evidence of causal relationship. In the course of these studies we have attempted without success to recover virus from 42 asymptomatic household contacts of virus-positive cases.

Vaccine Reactions

Immediate reactions to administration of adjuvant vaccines in 1951 and 1952–1953 were insignificant. However, 16 persons vaccinated in 1951 developed so-called sterile abscesses at the sites of injection which required drainage 3–16 months after vaccination. The significant factors associated with the frequency of abscess occurrence were: race (15 of the 16 abscesses occurred in Negro persons, a frequency of 1.2 per cent as compared to 0.1 per cent in white persons); age (13 abscesses occurred in children less than six years of age, a frequency of 1.8 per cent as compared to 0.2 per cent in persons six years and older); and vaccine received (11 abscesses occurred among persons receiving B/Va./1/50 vaccine, a frequency of 1.8 per cent as compared to 0.4 per cent in persons receiving other vaccines).

Two persons vaccinated in 1952–1953 later developed sterile abscesses which required drainage. Since only white persons were vaccinated in 1952–1953 the frequency (0.1 per cent) is comparable to that of the previous year among white persons in spite of the fact that a partially purified emulsifying agent was incorporated in vaccines used in 1952–1953.

Experience with Influenza B, 1951–1952

In 1951, during November and early December, 2,364 persons from five Norfolk residental areas (designated A, B, C, D, and E) were vaccinated and observed for the occurrence of acute febrile respiratory illness. In spite of prior and subsequent attempts, influenza B virus was isolated only from February 11 to March 31 when the incidence of acute febrile respiratory illness was exceptionally high. The disease occurred in epidemic proportions only in Area C, even though sporadic cases of influenza were specifically identified in each of the five areas.

Figure 1 shows the weekly incidence of acute febrile respiratory illness in Area C by week of onset and vaccine type. A definite epidemic peak among persons who received Type A vaccines

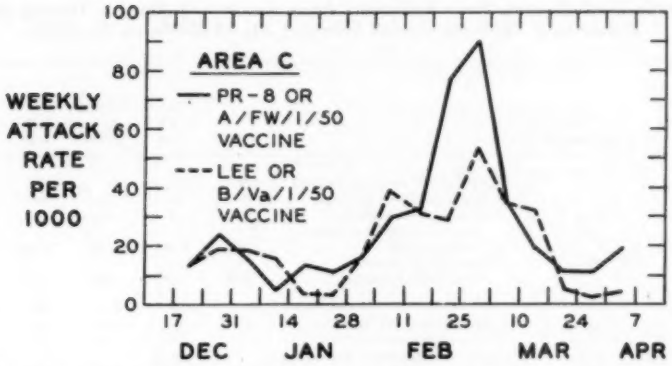

FIGURE 1—Febrile respiratory illness attack rates in persons vaccinated in November and December, 1951—observed during an influenza B outbreak, Norfolk, 1951–1952

was evident during the week ending March 2, 1952. A less prominent incidence peak occurred during the same week among persons receiving Type B vaccines. It should be noted that the outbreak culminated 13 weeks after the time of vaccination.

In Table 1 the incidence by vaccine group of acute febrile respiratory illness for the total epidemic period is presented. Although the antigenic composition of the virus isolated most closely resembled that incorporated in the B/Va./1/50 vaccine, no significant difference was noted in attack rates between the B/Va./1/50 and the Lee vaccinated populations. However, the difference in attack rates of acute febrile respiratory illness in Area C between the Type A and Type B vaccinated groups during the epidemic period is significant.

Table 1—Number and Per cent of Persons in Each Vaccine Group Having Acute Febrile Respiratory Illnesses During the Seven-Week Influenza B Epidemic Period (February 11–March 31, 1952) by Locality and Interval Between Vaccination and Epidemic Peak

Mean Interval Vaccination to Epidemic Peak	Locality Norfolk		Vaccines Received A/PR8	A/FW/1/50	B/Lee	B/Va./1/50	Total
13 Weeks	Area C	Vaccinated persons observed	187	174	182	192	735
		Illnesses reported	55	46	38	33	172
		Per cent attacked	29.4%	26.4%	20.9%	17.2%	23.4%
	Areas A-B-D-E	Vaccinated persons observed	408	406	411	404	1,629
		Illnesses reported	49	63	47	43	202
		Per cent attacked	12.0%	15.5%	11.4%	10.6%	12.4%
	All Areas	Vaccinated persons observed	595	580	593	596	2,364
		Illnesses reported	104	109	85	76	374
		Per cent attacked	17.5%	18.8%	14.3%	12.8%	15.8%

Table 2—Influenza Virus Isolations from Vaccinated Persons During the Influenza B Epidemic Period February 11, 1952–March 31, 1952

Mean Interval Vaccination to Epidemic Peak	Locality Norfolk		Vaccine Received A/PR8	A/FW/ 1/50	B/Lee	B/Va. 1/50	Total
	Area C	Vaccinated persons observed	187	174	182	192	735
		Ill persons tested for virus	27	18	15	16	76
		Ill persons virus-positive	10	9	2	4	25
		Per cent vaccinated persons virus-positive	5.3%	5.2%	1.1%	2.1%	3.4%
		Per cent ill persons tested virus-positive	37%	50%	13%	25%	33%
13 Weeks	Areas A-B D-E	Vaccinated persons observed	408	406	411	404	1,629
		Ill persons tested for virus	17	19	15	14	65
		Ill persons virus-positive	4	3	1	1	9
		Per cent vaccinated persons virus-positive	1.0%	0.7%	0.2%	0.2%	0.6%
		Per cent ill persons tested virus-positive	24%	16%	7%	7%	14%
	All Areas	Vaccinated persons observed	595	580	593	596	2,364
		Ill persons tested for virus	44	37	30	30	141
		Ill persons virus-positive	14	12	3	5	34
		Per cent vaccinated persons virus-positive	2.4%	2.1%	0.5%	0.8%	1.4%
		Per cent ill persons tested virus-positive	32%	32%	10%	17%	24%

Thirty-eight per cent of the febrile illnesses which occurred in Type A vaccinated persons and 37 per cent of the febrile illnesses in Type B vaccinated persons were studied for the presence of influenza virus during the epidemic period. It is noted in Table 2 that in spite of the equality of testing more than twice as many isolations were obtained from illnesses occurring in the A vaccinated groups. Although it is possible that this difference may be due to the presence of antibodies interfering with virus isolation, it is more likely

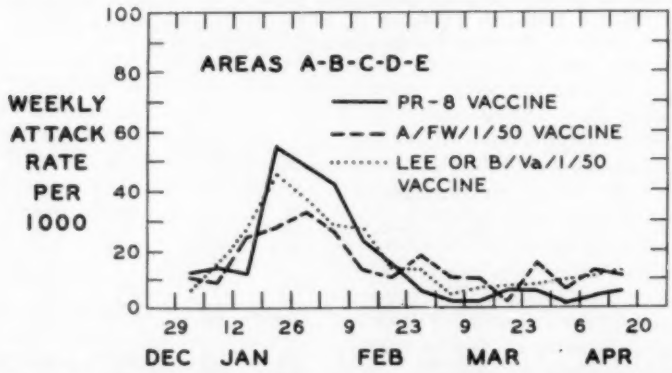

FIGURE 2—Febrile respiratory illness attack rate in persons vaccinated in November and December, 1951—observed during an influenza A outbreak, Norfolk, 1952–1953

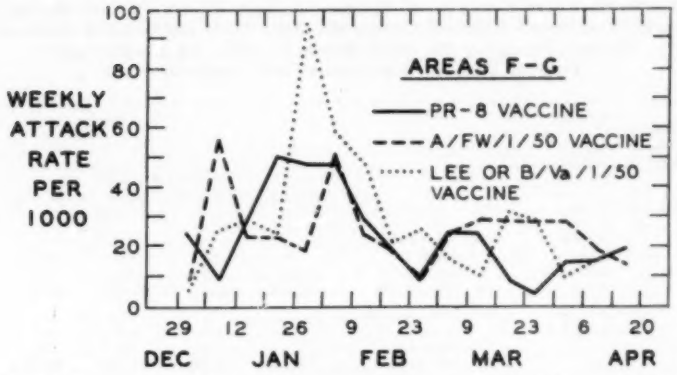

FIGURE 3—Febrile respiratory illness attack rates in persons vaccinated December 1–4, 1952—observed during an influenza A outbreak, Norfolk, 1952–1953

that such difference is evidence of protection in the B vaccinated groups.

Experience with Influenza A, 1952–1953

Areas F and G were admitted for study in Norfolk and vaccines were administered to 848 persons, December 1–4, 1952. In Arlington, 1,150 persons were vaccinated, January 6–9, 1953. Influenza A virus was subsequently recovered when outbreaks of febrile respiratory illness occurred simultaneously in both cities during the 9-week period, December 29–March 1, 1953. In contrast to the previous year all study areas experienced outbreaks of influenza. The isolated strains antigenically resembled the vaccine strain A/FW/1/50 but were not identical when tested by cross-hemagglutination inhibition.

Figure 2 shows the weekly incidence of acute febrile respiratory illness in

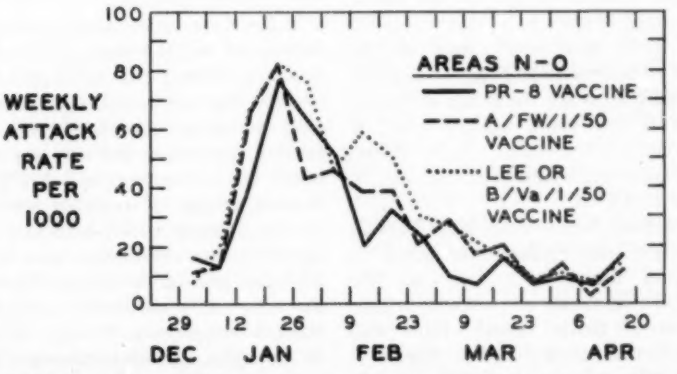

FIGURE 4—Febrile respiratory illness attack rates in persons vaccinated January 6–9, 1953—observed during an influenza A outbreak, Arlington, 1952–1953

Table 3—Number and Per cent of Persons in Each Vaccine Group Having Acute Febrile Respiratory Illnesses During the Nine-Week Influenza A Epidemic Period (December 29, 1952–March 1, 1953), by Locality and Interval Between Vaccination and Epidemic Peak

Mean Interval Vaccination to Epidemic Peak Weeks	Locality		Vaccines Received A/PR8	A/FW/1/50	B/Lee	B/Va./1/50	Total
60	Norfolk Areas A-B-C-D-E	Vaccinated persons observed	478	459	464	469	1,870
		Illnesses reported	109	79	101	98	387
		Per cent attacked	22.8%	17.2%	21.8%	20.9%	20.7%
8	Norfolk Areas F-G	Vaccinated persons observed	207	212	211	218	848
		Illnesses reported	56	50	64	79	249
		Per cent attacked	27.1%	23.6%	30.3%	36.2%	29.4%
2	Arlington Areas N-O	Vaccinated persons observed	300	282	295	273	1,150
		Illnesses reported	101	102	112	138	453
		Per cent attacked	33.7%	36.2%	38.0%	50.5%	39.4%

persons immunized 60 weeks prior to the appearance of influenza. Although the incidence of illness was lower during the epidemic period in the group which received A/FW/1/50 vaccine than in persons receiving PR8 or Type B vaccines, the difference was not striking.

Figure 3 shows the temporal relationship by vaccine group of acute respiratory illnesses occurring among individuals in Norfolk vaccinated eight weeks prior to the week of greatest influenza morbidity. Again the attack rate among individuals who received A/FW/1/50 was lower than in the groups which received Type B vaccines. The attack rates for the group receiving PR8 were also lower than in the Lee or B/Va./1/50 groups. Those differences, however, could well be due to chance variation.

In contrast to the 1952–1953 Norfolk experience, the epidemic occurred in Arlington immediately following the time of vaccination. Acute febrile respiratory illness attack rates culminated two weeks later. Figure 4 demonstrates the lack of difference in illness attack rates between vaccinated groups when vaccine was given at the start of the outbreak.

Table 3 summarizes the acute febrile respiratory illness attack rates in Norfolk and Arlington for the nine-week epidemic period, December 29, 1952–March 1, 1953. Although lower attack rates were noted in A/FW/1/50 Norfolk residents who were vaccinated four or more weeks prior to onset of the epidemic, no such differences were evident in Arlington residents vaccinated at the start of the epidemic.

Table 4 shows the number of ill persons tested and the number of isolations obtained during the influenza A outbreak. The per cent of the population with isolations associated with acute febrile respiratory illnesses was significantly low in the combined A/FW/1/50 Norfolk groups. Twenty-six per cent of febrile illnesses which occurred in the A/FW/1/50 vaccinated persons and 28.3 per cent of the febrile illnesses in the three other vaccinated groups were studied for presence of virus. However, in Arlington, as with incidence of febrile respiratory illness, no difference was noted between vaccinated groups.

Table 4—Influenza Virus Isolations from Vaccinated Persons During the Influenza A Epidemic Period December 29, 1952–March 1, 1953

Mean Interval Vaccination to Epidemic Peak Weeks	Locality		Vaccine Received A/PR8	A/FW/ 1/50	B/Lee	B/Va. 1/50	Total
60	Norfolk Areas A-B-C-D-E	Vaccinated persons observed	478	459	464	469	1,870
		Ill persons tested for virus	23	23	26	37	109
		Ill persons virus-positive	9	4	12	11	36
		Per cent vaccinated persons virus-positive	1.9%	0.9%	2.6%	2.3%	1.9%
		Per cent ill persons tested virus-positive	39%	17%	46%	30%	33%
8	Norfolk Areas F-G	Vaccinated persons observed	207	212	211	218	848
		Ill persons tested for virus	28	18	34	36	116
		Ill persons virus-positive	14	4	11	15	44
		Per cent vaccinated persons virus-positive	6.8%	1.9%	5.2%	6.9%	5.2%
		Per cent ill persons tested virus-positive	50%	22%	32%	42%	38%
2	Arlington Areas N-O	Vaccinated persons observed	280	295	282	273	1,150
		Ill persons tested for virus	51	53	63	67	234
		Ill persons virus-positive	21	19	18	20	78
		Per cent vaccinated persons virus-positive	7.0%	6.4%	6.4%	7.3%	6.8%
		Per cent ill persons tested virus-positive	41%	36%	29%	30%	33%

Summary

During studies of influenza in general population families residing in Norfolk and Arlington, Va., 4,362 individuals of all ages were vaccinated with monovalent influenza "water-in-oil" adjuvant vaccines. Each individual received intramuscularly 0.25 ml. of emulsified vaccine containing 100 CCA units of one of four strains of influenza virus: A/PR8, A/FW/1/50 (Cuppett), B/Lee and B/Va./1/50 (1210). These groups have to date been regularly observed for 18 months subsequent to vaccination for the occurrence of acute febrile respiratory illnesses and influenza diagnosed by virus isolation.

In Norfolk, 2,364 vaccinated persons were observed for the occurrence of acute febrile respiratory illness during 1951–1952. Significantly lower acute febrile respiratory illness attack rates during an outbreak of influenza B occurring 13 weeks after vaccination were noted among persons vaccinated with B/Lee or B/Va./1/50 vaccines than similarly administered Type A vaccines. Likewise, influenza virus was recovered from significantly fewer persons receiving these two vaccines than from persons who received PR8 or A/FW/1/50 vaccines. During an influenza A outbreak, 1,870 persons were observed 60 weeks after vaccination for the occurrence of respiratory illness. Acute febrile respiratory illness attack rates were lower among individuals who received A/FW/1/50 vaccine than among persons vaccinated with A/PR8, B/Lee, or B/Va./1/50 vaccines. The fewer isolations obtained in A/FW/1/50 vaccinated persons gave additional support to the thesis that some persons were immune 14 months after vaccination.

In Norfolk, 848 persons were vaccinated one month before the onset of an influenza A outbreak. The incidence of acute febrile respiratory illness and frequency of virus isolations was lower

among persons who received A/FW/1/50 than A/PR8 or Type B vaccines. In Arlington, 1,150 persons were vaccinated at the onset of an influenza A outbreak. No protection, as evidenced by incidence of acute febrile respiratory disease and frequency of virus isolations, was afforded the A/FW/1/50 vaccinated group.

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Fluoridation Upheld in Two Cities

The Common Pleas Court of Cleveland, in answer to a taxpayer's suit challenging the constitutionality of fluoridation of the city's water supply, ruled that "constitutional guarantees are not violated because they must yield to a public health measure which is determined necessary for the common good by a legislative body. . . . A person's constitutional right to treat his health as he deems best, of parents to raise their children as they deem best, and to be free from medical experimentation and to exercise freedom of religion are all subordinate to the common good." Thus the approval of a fluoridation project and earmarking of $116,000 for carrying it out, stands.

In Milwaukee recently a resolution stopping fluoridation was vetoed by the Mayor and the veto upheld by the Common Council, 18 to 8. Fluoridation had begun in 1953.

The Diagnostic Laboratory in the Civil Defense for Biological Warfare

JOHN J. PHAIR, M.D., Dr.P.H., F.A.P.H.A.

Professional—like public—apathy about civil defense is compounded of all-too-human reluctance to face unpleasant possibilities and the assumption that nothing practical is being done anyway. This paper addresses itself to the second factor and will help to disabuse all health workers of that common misapprehension.

✣ Biological warfare (BW) is the intentional use of living organisms or their toxic products to cause death, disability, or damage in man, animals, or plants. The primary target is man, either by causing sickness or death, or through limitation of his food supplies or other agricultural crops. Man must wage a continuous fight to maintain and defend himself, his animals, and his crops in competition with insects and microorganisms. The aim of BW is to overcome these efforts by deliberately distributing large numbers of organisms or pests of native or foreign origin or their toxic products, taking advantage of the ability to utilize more effective methods of dissemination and unusual portals of entry.

Among the human bacterial diseases suggested are bacillary dysentery, cholera, brucellosis, tularemia, anthrax, plague, glanders, typhoid, the leptospiroses, treponematoses, and salmonelloses. In the virus field are found psittacosis, the several encephalitides, influenza, Rift Valley fever, infectious hepatitis, dengue, and smallpox. Certain rickettsial infections, epidemic, endemic, and scrub typhus, Rocky Mountain spotted fever, and Q fever have been named. Fungus diseases, such as coccidioidomycosis, histoplasmosis, nocardiosis, and blastomycosis have been included. Protozoal infections, including malaria, amebic dysentery, and toxoplasmosis, have been mentioned. Finally, the toxins formed by Clostridium botulinum, Corynebacterium diphtheriae and various staphylococci, are usually listed.

Turning to domestic animals, there are many target populations, each with its individual entourage of parasites. Diseases not commonly found in this country are most often described as possible BW hazards. They include foot-and-mouth disease, rinderpest, Rift Valley fever, Teschen disease of swine, hog cholera variants, fowl plague, and the highly fatal strains of Newcastle disease. The native infections, such as anthrax, brucellosis, tuberculosis, hog cholera, vesicular exanthema, vesicular stomatitis, pullorum disease, fowl paralysis and the upper respiratory infections of chickens, pigs, and cattle cannot be overlooked. Some can be as damaging as any exotic organism if permitted to run unchecked.

In the plant field are found even a greater number of possible target populations and biological agents. It seems likely that various viruses, fungi, certain bacteria, nematodes, and many insect pests would be considered.

There are many methods easily adaptable for intentional dissemination. Bombs or spray generators can produce

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aerosol clouds of the biological material for limited targets or to blanket wide areas. Aircraft, balloons, submarines, and surface vessels can launch similar attacks using many devices. Saboteurs can readily contaminate air, water, and food supplies.

Animal diseases can be introduced and spread secretly through feeds, biologics, raw garbage, and even by infested wearing apparel. The utilization of wild animals cannot be overlooked. There are three avenues for use against plants and crops: (1) the destruction of plants during the growing season by chemical attack; (2) a mass inoculation with pathogenic spores; (3) the introduction—probably by covert means—of exotic pathogens or pests which would become serious disease or insect problems later.

Extreme statements have been made concerning the feasibility of this weapon and available defenses. Because history records the devastating action of epidemics and pandemics, it has been predicted that in the event of a successful BW attack entire populations would be disabled followed by a high mortality. Conversely, it has been asserted that the hazard would be small because man, his animals, and his crops have survived centuries of natural exposure to infectious pathogens. All these estimations are speculative because the evidence required for a critical appraisal will not be available until BW has been attempted.

The lists of possible agents and suitable methods of dissemination, it is clear, are long and varied. It is equally obvious that any number of parasites, either alone or in combinations, might be employed under widely differing conditions. This freedom of selection hinders the appraisal of the hazard and emphasizes the broad approach, both diagnostic and therapeutic, required for BW defense planning. It would be foolish to prepare for only a single agent or to assume that a determined aggressor would not take advantage of the opportunity to pick and choose his weapon.

In light of present knowledge, a reasonable assessment of the hazard would place it somewhere between the two extremes described earlier. Therefore, the Federal Civil Defense Administration plans assume that a determined enemy can and may attack man, animals, or plants effectively by deliberately spreading pathogenic agents, covertly or overtly, alone or in combination with other weapons. On the other hand, the stand is taken that the accumulated understanding of the epidemiology and control methods for human, animal, and plant parasites in the fields of preventive medicine, public health, and agriculture is sufficient to permit development of an acceptable civilian defense.

Defense Plan

Prior to an attack, emphasis is being placed on maintaining and increasing the resistance of target populations by improving those organizations and measures devised to protect the health and well-being of this country. Even though deficiencies exist, it should be recognized, but not complacently, that the United States is far better equipped in this regard than many other countries. There is no need to change federal, state, and local programs, but steps should be taken to bring about continuing, over-all improvement in facilities, equipment, and procedures, including the provision of trained personnel.

During an attack it is essential to know quickly when and where a BW agent was used and what it was. These will be difficult questions to answer in time to initiate countermeasures. Accurate, rapid means for detecting and quickly identifying foreign material in

air, water, or foodstuffs are among the major needs in the BW defense field. Those available at present cannot be relied upon, since most require hours, days, or even weeks to complete. Entirely new technics, apparatus, and materials are required. Further complications may be caused by an enemy's ability to attack covertly or to employ BW in combination with other weapons. Constant monitoring of environmental elements while desirable is only feasible for relatively small, well controlled areas.

Intensive programs to develop satisfactory technics for a limited operation of semiautomatic mechanisms are under way. At the same time, it must be recognized that there is no thought that such measures will be available for immediate use in the civil defense program. Even if the explorations are outstandingly successful, field application will have to be carefully weighed in order not to overburden existing facilities.

Until means are available for quickly detecting biological agents, a defense during attack is difficult. Protective devices, collective and individual, used arbitrarily during overt actions may offer some help for man. Little can be done for animals or plants. After an overt attack, opportunities may be found to examine unexploded munitions or "duds." Then the atmosphere or surfaces could also be sampled. Health departments, animal, and plant disease control agencies, physicians, veterinarians, and individual citizens then must combat the infectious agents or pests introduced. Possible measures include identification of the agent, prompt reporting of cases, protection of susceptibles, treatment or eradication (animal and plants) of infected hosts, and disinfection of infected areas. The relative importance of each is quite different for human, animal, or plant populations.

Until satisfactory methods for environmental sampling have been perfected, disease remains the most reliable indicator of BW agents. The occurrence of an unusual case or of an epidemic in all probability will be the first signal that a BW attack has been made. As a consequence, prompt diagnosis, reporting, proper therapy, followed by epidemiological investigations, become the keystones of the present BW defense plans.

No new pattern is demanded. For man, physicians will rely upon the local health department for diagnostic assistance. The state health department should support local efforts and should call upon the regional director of the Public Health Service. He, in turn, should seek aid from the section coordinator of the Sectional Research Program, the Communicable Disease and Environmental Health Centers of the Public Health Service, the Federal Civil Defense Administration—regional and national—and the Department of Defense.

Each area may vary somewhat in the formulation of operating procedures. The outline suggested previously follows the usual peacetime pattern for most situations. It should be recognized, however, that the channel as described is not necessarily the only one that can be used. If satisfactory liaison is established between the interested groups, many modifications are possible.

For animals, the BW defense program involves cooperation of the Bureau of Animal Industry of the Department of Agriculture, the State Livestock Sanitary Board, and the Public Health Service of the Department of Health, Education and Welfare. Channels for diagnosis, reporting, and control are under their supervision. In the plant field, knowledge of the biology and ecology of exotic diseases is being extended by the Department of Agriculture.

Role of the Diagnostic Laboratory

Two major areas in the civil defense program for BW become the responsibility of the diagnostic laboratories, federal, state, and local. The first is the problem of detection and identification of deliberately disseminated biological agents in the environment. The second is the part played in the diagnosis, reporting, therapy, and epidemiological investigations of disease.

Since practical methods for collecting and identifying BW materials in air, water, food, and on surfaces are still being sought, FCDA at this time is not recommending routine testing. However, experimental trials or research are welcome and should be supported. Two avenues are open—physical detection, using various impinging or filtering procedures is one; and the other is biological detection, utilizing known bacteriological or immunological methods. (There is no reason to describe either in detail in this paper.) The experience gained through such efforts would be valuable if a satisfactory detection system should be developed and approved. Furthermore, there is the need to accumulate background data regarding the kind and amount of biological materials commonly occurring in the environment.

The need to improve and speed identification procedures also warrants attention. Even if rapid detection methods were found in the future, the problem of identifying the agent still remains. Proper countermeasures cannot be considered or instituted if the agent is unknown.

Until such procedures are available and the technical problems of immunization and prophylaxis are solved, defense efforts will be restricted to minimizing rather than preventing disease. Such goals include shortening the period of incapacitation, reducing the number of deaths, and preventing the occurrence of secondary or contact cases.

In the event of successful BW attack, casualties will be sent to the community clinics and hospitals, and the first diagnostic procedures will be carried out locally. Many problems will be encountered because of the variety and complexity of the clinical and laboratory procedures required to establish diagnoses following exposure to BW. In some aspects, these will be more difficult to solve than those met with in environmental sampling. Single BW agents or combinations may be involved or unusual portals used. As a result, it may be expected that the syndromes will not follow classical patterns.

The laboratories of communities, hospitals, and health departments must be prepared to meet this demand. The state and local civil defense and health authorities should inventory and expand the resources under their jurisdiction. The regional FCDA offices will assist in so far as possible. This effort should include: (1) a survey of the facilities which may be required, including equipment and reagents which are now available; (2) an exploration of the potential capabilities of private laboratories operating in the same jurisdiction, be it state or local; (3) planning of actual procedures and steps to be taken to meet emergency needs, whether they should arise from natural disasters, wartime emergencies, or biological warfare; (4) designation of personnel to be prepared to handle specific diagnostic laboratory procedures and routines; and (5) strengthening the channels of communication for immediate reporting and interchange of information at the working level.

These are only a few examples of the steps which can be taken at the present time. They do not require specific authorization or assistance. Most laboratory directors and supervisors have a sufficient awareness of the

problems which will be encountered to assume the responsibilities for planning specific and detailed operating procedures. It is recognized that efforts may be subject to possible modifications as additional information becomes available.

One can only guess at the kind and extent of facilities, clinics, and laboratories required to provide the required detection and diagnostic services. State laboratories will continue to serve for consultation or assist if local facilities are overtaxed. This customary relationship should serve equally well for meeting the hazard of BW. Additional consulting laboratories may become necessary. The number of specialized laboratories in which skills exist for identifying exotic or unusual agents need not be large, but all parts of the country should have ready access to these facilities. An important consideration which enters into this assumption is that the amount of unusual work need not be large As is found during the peacetime investigation of epidemics, only the early cases need detailed study. Likewise, only a relatively small number of air, water, or food samples will require elaborate analyses.

The Sectional Research Program of the National Microbiological Institute has already mobilized certain research and diagnostic facilities, particularly in the virus field. This can serve as the initial nucleus of an integrated standby support. At present, although hampered by a limited budget, additional participation by laboratories is being sought, particularly from state health departments. Tests are being standardized, antigens and antisera are in process of evaluation, and facilities are being expanded.

The FCDA is supporting these latter activities. This is one of the goals of the Contributions Program of this agency for the coming year. It has been proposed to: (1) assist states and their political subdivisions in acquiring adequate laboratory supplies for conducting training of technicians in the problems of biological warfare defense; (2) aid states in joining in the development of technical defense measures for agents directed at man and animals; and (3) assist the states in the development of programs to train personnel in the proper methods of detection, isolation, and identification of BW agents and for the diagnosis of disease to prepare them for possible service as technicians in biological warfare defense.

The first step was to secure a method of furnishing equipment for such efforts. The FCDA in its Contributions Program now will consider approvable the following examples of diagnostic reagents and supplies in order that states can begin certain training programs: (1) antigens and antisera of typhoid, paratyphoids, typhus (murine), brucellosis, and various strains of Shigella and Salmonella; and (2) common small laboratory equipment items, such as pipettes, cylinders, flasks, spot plates, racks, cotton plugs, and mailing cases.

It would be desirable also to have a liaison worker devoting full time to BW problems at the section level. With such help, all laboratories in the area might serve as focal points for training in the diagnosis of unusual infections, receiving information regarding possible BW attacks, and assisting in the investigation of suspicious disease outbreaks.

The success of the entire defense depends upon the availability of competent, trained professional and technical personnel. Since their defense activities with only a few exceptions are essentially those of peacetime medicine and public health, no unusual background is required. However, it would be advisable to arrange for refresher courses at the state and local level in some of the standard health procedures, such as the diagnosis and treatment of the com-

municable diseases. Diagnostic laboratories can play a major role in this activity.

The program need not be elaborate or complex. To meet the problems of BW only a small amount of extra material must be added to courses already provided for peacetime duties. The principal objective will be to alert the health agencies, the physicians, and the civil defense authorities to the problems presented by the use of a biological weapon directed at man.

All must insure a reasonable understanding of BW by the public. Hazards and defense mechanisms must be accurately described and evaluated. Since the defense of the individual is essentially a personal responsibility, the end goal is adequate orientation of the individual citizen.

The proposed training can be supplemented by: (1) brief programs for alerting professional personnel given at meetings—state, regional, or national—of groups, such as the American Public Health Association, American Medical Association, Society of American Bacteriologists, Association of State and Territorial Health Officers, and many similar organizations; (2) refresher courses in the diagnosis and control of communicable disease to be given by state health departments, the Academy of General Practice, and similar groups for local practitioners and allied professional personnel; and (3) technical training under the auspices of state and local health agencies in emergency environmental sanitation and food inspection.

Only token support has been obtained for these efforts thus far, in spite of the great interest in this subject. The Public Health Service through its Communicable Disease and Environmental Health Centers offers courses for health personnel covering certain aspects. The programs which might be of some value in BW have been opened to a limited number of civil defense personnel. In a cooperative effort, additional emphasis has been placed on aspects of BW by our professional schools. Medical, veterinary, and nursing students will be given a greater amount of instruction in the diagnosis of infectious diseases and emergency sanitation. However, much remains to be done.

Summary

For the general population, BW defense is centered upon the rapid recognition, reporting, and treatment of cases. Until detection procedures are available, efforts can be directed only at minimizing rather than preventing casualties. Specific countermeasures are limited in number and applicability. The stand is taken that no entirely new problems will be created and the present health facilities, especially in the laboratory field, will form the principal bulwark. There is no need to change the programs, but it is necessary to bring about continuing, over-all improvement in personnel, facilities, equipment, and procedures to strengthen this defense. It should be recognized, but not complacently, that even though deficiencies exist, the United States is better equipped to meet this threat than many other countries.

This approach depends upon the availability and distribution of professional personnel, particularly in the diagnostic laboratory. Since their duties are essentially unchanged, no unusual training is envisioned. Refresher courses may be needed in the diagnosis and treatment of communicable diseases. Programs must be designed to bring understanding to all levels of the population. Since defense finally is always a personal affair, the final goal is the orientation of the individual citizen to the danger and his responsibilities.

Studies on Bacterial Hemagglutination

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The point of this paper—reduced to nontechnical terms—is that certain bacteria produce modifying (antigenic) substances which may be picked up (adsorbed) by red blood cells to render the latter susceptible to clumping (agglutination) by homologous bacteria-engendered antibodies. This phenomenon appears to have important diagnostic implications that you will want to know about.

✢ More than half a century ago, Kraus and Ludwig [1] made the interesting observation that certain bacteria, namely, staphylococci and vibrios agglutinate red blood cells. These studies on bacterial hemagglutination were extended during the following decades. However, it was not until after 1941, when the classical investigations on virus hemagglutination were published by Hirst [2] and by McClelland and Hare,[3] that renewed interest in bacterial hemagglutination developed. As a result of these studies, it is now possible to recognize two basically different types of bacterial hemagglutination. In the first type, the bacteria bring forth agglutination of suitable red blood cells; this type may be referred to as direct bacterial hemagglutination. In the second type, the bacteria cause a change of the red blood cells, rendering them susceptible to agglutination by antibodies. This type may be referred to as indirect bacterial hemagglutination. This indirect bacterial hemagglutination results from the action of antibodies active against (1) antigenic components of the red blood cells which are not reactive in the untreated erythrocytes, as exemplified by T-agglutination, or (2) bacterial antigens which have been adsorbed to the surface of the erythrocytes. This latter type of indirect bacterial hemagglutination was first observed by Keogh, North, and Warburton [4, 5] and most intensively used for the demonstration of antibodies against the tubercle bacillus, following the investigations of Middlebrook and Dubos.[6] It is now known that numerous bacterial antigens may be adsorbed by red blood cells and can be demonstrated by agglutination of the modified red blood cells by homologous bacterial antibodies. Conversely, such modified erythrocytes may be used as diagnostic tools for the demonstration and titration of bacterial antibodies.

Recent studies have clearly shown that an interesting relationship exists between certain antigenic and other characteristics of Escherichia coli and its pathogenic potentialities. Two serogroups (0111 and 055) have been found by British investigators to be associated with, and indeed, may be the cause of, epidemic diarrhea of the newborn; this association has been confirmed by others in various parts of the world (for a review of these reports cf. Neter, Webb, Shumway, and Murdock [7] and Neter, Korns, and Trussell [8]). Additional evidence indicates

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that other serogroups of E. coli (026, 073, 086, and type "Canioni") may be associated with diarrheal disease of infants. These serogroups represent but a small fraction of the known (more than 112) serogroups of E. coli. Extensive studies by Sjostedt [9] and by Kauffmann [10, 11] have led the latter investigator to suggest that certain serological Escherichia types are playing the main role in the etiology of appendicitis; according to this concept, appendicitis is a true infectious disease.

To add to the evidence on the etiological role of certain serological types and groups of E. coli in various infections of man and animals, it would be desirable to demonstrate a specific antibody response of the host. So far as epidemic diarrhea of the newborn and diarrheal disease of the young infant are concerned, the demonstration of an antibody rise is but rarely possible by means of the conventional bacterial agglutination test. Likewise, Vahlne (cf. Kauffmann [10]) obtained positive results with this method in only 11 out of 94 cases of appendicitis without peritonitis. It was with these considerations in mind that studies on the E. coli hemagglutination test were commenced in this laboratory in 1951 in the hope that this method may prove to be more sensitive than, and as specific as, the bacterial agglutination test. The present report summarizes certain fundamental aspects of this test and its diagnostic potentialities.

E. coli Hemagglutination Test and its Hemolytic Modification—E. coli 0111, 055, and 026 suspensions, after being heated in boiling water for one hour, modify red blood cells of various species, including man, dog, rabbit, sheep, guinea pig, rat, mouse, and chicken, and thus render these erythrocytes specifically agglutinable by homologous bacterial antibodies.[12, 13] In contrast, the same freshly harvested and unheated suspensions fail to modify red blood cells. Modified erythrocytes of certain, but not all, species are lysed in the presence of the bacterial (rabbit) antibodies and (guinea pig) complement; sheep red blood cells are most susceptible to lysis and human blood cells least susceptible. In fact, a bacterial (rabbit) antiserum in considerably higher dilution causes lysis of modified sheep blood cells than agglutination, and the reverse holds true with human red blood cells. Modification of red blood cells has been accomplished also by Le Minor, Le Minor, and Grabar [14] in independent studies on hemagglutination and hemolysis with 0 and Vi antigens of enterobacteriaceae. According to Le Minor,[15] the antigen becomes available for hemagglutination on aging of the culture or by treatment with toluene or extraction with trichloracetic acid. Since unheated E. coli suspensions were found to inhibit hemagglutination specifically,[12] without modifying red blood cells, a study on the relationship of the inhibitory to the modifying antigens was undertaken.

Transformation of Inhibitory to Modifying E. coli Antigens—E. coli 026 saline suspensions were harvested from Kolle flasks and tested for the presence of inhibitory and modifying antigens either immediately or after being kept for various periods of time under aseptic conditions at 37° C. and 4° C., respectively. It was found that the unheated and freshly prepared suspensions and bacteria-free supernates thereof failed to modify red blood cells, even when undiluted materials were employed. In contrast, the identical saline suspensions after being kept for three to seven days at 37° C. modified red blood cells; the appearance of the modifying antigen under these conditions is particularly striking when one realizes that the incubated suspension even in dilutions of 1:100–1:800 modified sheep red blood cells for lysis by bacterial antibodies. When the suspen-

sion was kept up to seven days at 4° C., modifying antigen failed to appear. It is of particular interest to note that the titers of the inhibitory antigen increased but slightly (2 to 8-fold) on incubation at 37° C. Since the inhibitory and modifying antigens react with the identical E. coli antibodies, the data suggest the existence of the E. coli antigen in two forms: one, capable of reacting with both antibody and red blood cell receptor, and the other, capable of reacting only with the antibody. Purification, isolation, and chemical identification of these two forms of the antigen will be of considerable interest.

Since the modifying antigen can be prepared also by heating freshly prepared E. coli suspensions at 100° C., the question arises as to the mechanism responsible for this effect. To elucidate this problem, the following experiments were carried out. Bacteria-free supernates of unheated and heated E. coli suspensions were tested for inhibitory and modifying capacity. In addition, the supernates and Berkefeld filtrates of unheated suspensions were heated at 100° C. and tested in like fashion. It was found that heating of bacteria-free supernates or filtrates of unheated suspensions is followed by the appearance of modifying antigen in low titer; the inhibitory antigen, too, was present in relatively small amounts. This indicates that heating transforms the inhibitory to the modifying antigen. Furthermore, the inhibitory and modifying antigens are present in far higher titers in the supernate or filtrate of heated than of unheated suspensions, suggesting that heating also releases large amounts of the antigen. The precise mechanism by which incubation at 37° C. and brief heating at 100° C. causes the transformation of inhibitory to modifying antigen remains to be elucidated. Such studies are now in progress. In this connection it is interesting to point out that, as observed in this laboratory,[16, 17] certain human plasma fractions as well as lecithin and cholesterol interfere with the adsorption of the bacterial antigen by erythrocytes.

Demonstration of a Common Antigen in E. coli 073 and Type "Canioni" by Means of the Hemagglutination Test—Taylor and Charter [18] reported in 1952 on an outbreak of gastroenteritis and infection of the upper respiratory tract in infants which was associated with E. coli type "Canioni." In view of these findings a study was undertaken to determine whether the antigen of this type of E. coli and its homologous antibody can be demonstrated by means of the hemagglutination test. The strain, as well as the respective antiserum, were made available through the kindness of Dr. Taylor. It was found that heated suspensions of this organism modified sheep red blood cells specifically to the homologous bacterial antibodies, yielding both hemagglutination and hemolysis. Furthermore, it was observed that red blood cells modified by this antigen were not lysed in the presence of complement and suitable amounts of E. coli 0111, 055, and 026 antisera. However, lysis did occur with E. coli 073 antisera; thus, the antigenic relationship of type "Canioni" and serogroup 073 required elucidation. It was found that suspensions of E. coli 073 and type "Canioni" which had been autoclaved at 15 pounds pressure for 30 minutes absorbed the antibodies from both 073 and "Canioni" antisera, when tested with either 073 or "Canioni" modified sheep red blood cells. It may be concluded, therefore, that Escherichia serogroup 073 and type "Canioni" contain a common antigen. Studies are needed to determine the precise nature of this common antigen and to elucidate the question as to the presence of antigens characteristic of each.

E. coli Hemagglutinin Response of Patients with Diarrheal Disease Associated with Certain Serogroups of E.

coli—Prior to studies on the potential usefulness of the hemagglutination test for the demonstration of the antibody response of infants suffering from diarrheal disease associated with certain serogroups of E. coli, an investigation on the development of group-specific antibodies in adult human volunteers following the ingestion of E. coli 055 was undertaken by Neter, Zalewski, and Ferguson.[10] The data obtained showed that an increase in E. coli 055 hemagglutinin titers occurred in all subjects following administration of organisms in large numbers and in two-thirds of individuals who received smaller numbers. In contrast, no such rise in antibody titer was observed in control subjects who had received killed E. coli 055 organisms in large numbers. Interestingly, the titer of bacterial hemagglutinins against a "normal" strain of E. coli, isolated from a healthy infant, did not increase following ingestion of this strain in large numbers. These observations indicate that the amount of antigen administered with the killed E. coli 055 organisms either was inadequate for the stimulation of antibody formation or did not pass the intestinal barrier. The difference in the antibody response to living E. coli 055 and "normal" organisms is reflected also in clinical effects, the former producing gastrointestinal disturbances in contrast to the latter. Since the titers of E. coli 055 hemagglutinins were from five to 20 times higher than those obtained by the conventional bacterial agglutination test, the potential usefulness of the hemagglutination method is obvious.

So far, opportunity has not been afforded to study the antibody response of many infants with diarrheal disease associated with certain serogroups of E. coli. However, some encouraging results have been obtained in a few instances. For example, a six-month-old baby infected with E. coli 026 had homologous hemagglutinins in a titer of 1:800 on the eighth day of illness; the titer remained at that level during the next five days. The corresponding hemagglutinin titer against E. coli 0111 was 1:50 and that against E. coli 055 less than 1:25. It is interesting to note that no bacterial agglutinins could be demonstrated against the patient's own strain. In another 20-month-old infant suffering from diarrheal disease associated with E. coli 026, the homologous E. coli hemagglutinin titer was 1:640 and the bacterial agglutinin titer 1:160 eight days after the onset of the diarrheal disease. The bacterial hemagglutinin titers for E. coli 0111 and 055 were 1:80 and 1:40, respectively. Further studies are obviously needed, particularly on newborn and very young infants, in view of the possibility that antibody formation may not occur in this age group because of immunogenic immaturity.

E. coli Hemagglutinin Response of Patients with Appendicitis—In view of the E. coli theory of appendicitis of Kauffmann [11] and in order to evaluate further the potential usefulness of the E. coli hemagglutination test, the antibody response of 18 patients with appendicitis complicated by peritonitis was determined. At least two blood samples were available for titration of hemagglutinins against the patient's own strain of E. coli isolated from the peritoneal exudate. The following results were obtained. Ten of the 18 patients showed an increase in homologous E. coli hemagglutinins ranging from four-fold to 30-fold; five patients showed a two-fold rise and no increase could be demonstrated in three individuals. It is noteworthy that all five patients whose sera showed only a two-fold rise had these antibodies in high titer, exceeding 1:160. It is of particular interest to point out that bacterial agglutinins could be demonstrated in only three of the 18 patients and the

bacterial agglutinin titers were low (1:20 and 1:40, respectively) in two of them. It is clearly evident, then, that the hemagglutination method was far more sensitive than the conventional bacterial agglutination test and either a significant increase in homologous E. coli hemagglutinins or a high titer could be demonstrated in 15 out of 18 patients. It may be mentioned, too, that successful adsorption studies were carried out with the homologous E. coli strains in three instances, indicating the specificity of the reaction.

A similar study on eight patients suffering from appendicitis without peritonitis revealed the following data. A four-fold or greater increase in the titer of hemagglutinins against the strain isolated from the appendix was found in three cases, a two-fold increase in two, and no increase in three other individuals. Three of the five patients who failed to respond with an increase in hemagglutinins exceeding two-fold had antibodies on the first specimen in a dilution of 1:160, or higher. Thus, of the eight patients of this series, six either showed a rise in titer or had homologous hemagglutinins in titer of 1:160, or higher. Only two of these patients had or developed bacterial agglutinins, the titers being 1:20 (without an increase) and 1:80, respectively. These preliminary data suggest the potential value of the hemagglutination method in such studies. It should be stated also that additional positive results might have been procured had blood samples been obtained after discharge from the hospital. One case is of particular interest, inasmuch as no antibody response occurred against the strain isolated from the lumen of the appendix but a significant rise of hemagglutinins was demonstrated against the strain isolated from the wound. Whether the wound infection, per se, resulted in this antibody formation or whether more than one antigenic type of E. coli was present in the appendix, the nonpathogenic one being used and the pathogenic one being overlooked, cannot be stated at this time.

The data just presented justify further investigations into the E. coli hemagglutination test and suggest its potential usefulness as a diagnostic tool for the study of E. coli antigens and the demonstration of the E. coli antibody response of patients.

Summary

1. The indirect bacterial (Escherichia coli) hemagglutination test and its diagnostic potentialities are described.

2. This test can be used for the demonstration of the E. coli antigens of serogroups 0111, 055, 026, 073, and type "Canioni" and the homologous bacterial antibodies. These groups of E. coli have been found to be associated with epidemic diarrhea of the newborn or infantile gastroenteritis.

3. The transformation of an E. coli antigen which is incapable of modifying erythrocytes to a modifying antigen is described; both antigens react with the identical bacterial antibody.

4. By means of the E. coli hemagglutination test and the hemagglutination inhibition test an antigenic relationship between E. coli serogroup 073 and type "Canioni" was found.

5. The E. coli hemagglutinin response of patients with diarrheal disease and of adult volunteers following the ingestion of E. coli 055, as well as of patients with appendicitis, is described and has been found to be equal or superior to the conventional bacterial agglutination test.

6. The demonstration of the antibody response of these patients lends support to the concept of the role of certain serogroups or serotypes of E. coli in infantile diarrhea and appendicitis.

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Philip E. Ryan Heads National Health Council

Philip E. Ryan, who has most recently been special assistant to the director of the National Social Welfare Assembly, has been named to succeed Thomas D. Dublin, M.D., as executive director of the National Health Council. Earlier he was an adviser on health, welfare, and education in the civil assistance program of the U. S. Army in Korea. He has also been chief of mission for the International Refugee Organization in the U. S. Zone in Germany. He is the author of Migration and Social Welfare, published by the Russell Sage Foundation.

Dr. Dublin, who had been with the council since early in 1949, resigned recently to accept a position with the National Foundation for Infantile Paralysis.

Membrane Filter and Emergency Water Supply Control

GILBERT V. LEVIN and EDMUND J. LAUBAUSCH

Though a gala occasion created this sanitary emergency, the measures put together on the spot—and applied so successfully to assure a safe potable water supply under unusual and hazardous conditions —will recommend themselves to any health department suddenly confronted with a potential epidemic created by disaster, whether man-made or natural.

✢ Americans came to their Capital for the January 20, 1953, Presidential Inaugural celebration by every means of modern transportation. Particular interest from a public health engineer's viewpoint centered about some 8,000 of them who lived in the railroad yards. In attempting to meet the tremendous housing demand imposed on the District of Columbia during this period, the Baltimore and Ohio and Pennsylvania Railroads planned special "hotel" trains to accommodate organized groups. The groups (such as state delegations or veterans' clubs) lived aboard the same sleeping cars that transported them to and from the District. As it finally emerged, "Pullman City" consisted of 299 sleeping cars, parked in five "boroughs" located in as many railroad sidings scattered throughout the District. It was necessary to use freight sidings, despite their lack of sanitary facilities; the passenger terminal had to be free of parked cars in order to meet the tremendous transportation problem. Pullman City was in existence from January 17 through January 23.

During its brief existence, Pullman City posed serious problems for the District of Columbia Health Department. Many months in advance, the Bureau of Public Health Engineering began planning protective measures to insure the adequate and safe handling of water, ice, sewage, garbage, and rubbish. Because some unique approaches were made in the handling, protection, and control of the water supplied to the railroad cars, it is believed that this account will be of interest and value to persons in water supply work and other public health fields. The outstanding feature of the entire operation was the first reported, emergency field application of the membrane filter ever made in this country.

Remoteness of connections to the municipal water supply dictated the use of street-flusher tank trucks to carry water from fire hydrants to three of the yards. Water tanks of the railroad sleeping and dining cars were filled directly from the trucks.

At the other two yards, temporary canvas and rubber pipe lines were laid to carry city water from nearby hydrants. These lines paralleled the tracks supporting the cars to be serviced. Hose bibs were tapped in these lines at intervals, to permit the watering of each car by portable hose.

Both of these methods required "handling" of the municipal water, ex-

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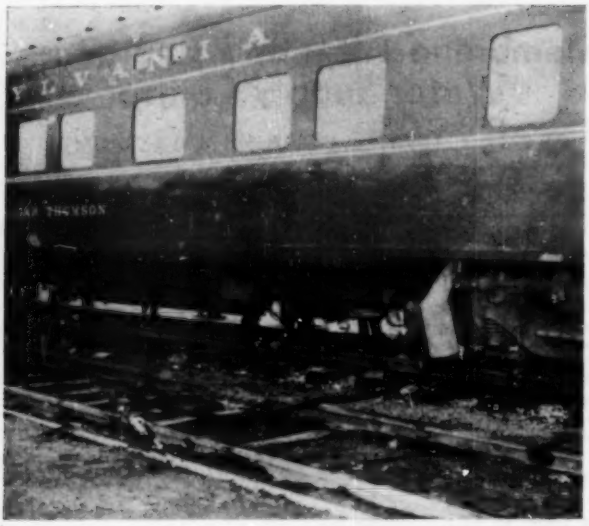


FIGURE 1—Temporary pipe line and hose watering railroad car. Note soil can directly above hose

posing it to serious potential contamination hazards. These hazards were very real, in that sewage was an ever-present factor. Watering operations had to be carried out, and the water loaded in the cars, within two or three feet of soil cans used to collect the sewage from the cars (Figure 1). Although collection and handling of the sewage were carefully planned, it would be folly to assume that no sewage would be spilled on the ground or cars, or even on the water hose and pipe lines. Together with contamination factors which are always present when handling water by temporary means, this condition presented all the ingredients of a serious epidemic. To assure maximum protection to the visiting public, the Bureau of Public Health Engineering carefully planned and supervised the handling procedures, and prepared the following instructions which were distributed to the responsible parties:

Procedure for Sterilizing Water Tank Trucks

Calcium hypochlorite (70 per cent available chlorine) shall be used as the sterilizing agent; chlorine strength of the sterilizing solution shall be 100 ppm.

1. Flush truck with fresh city water (discharging through all outlets).
2. Drain truck and close all outlets.
3. Sterilize all removable fittings and filling hose for one hour in 100-ppm chlorine solution.
4. Replace fittings and add required amount of calcium hypochlorite as powder or in concentrated solution (three pounds for 2,600-gallon flusher) and fill flusher with city water.
5. Circulate this water through flusher by sterilized hose from right front truck outlet back to tank for one hour.
6. Stop circulation and allow to stand for four hours.
7. Again circulate water in same manner for one hour.
8. Drain flusher completely through all outlets.
9. Flush truck two complete times through all outlets.
10. Close all outlets and fill truck with fresh city water, and flusher is ready for use.

This operation should be done as nearly as possible to the time of use of the truck. Steps 8, 9, and 10 should not be taken more than one day before such time. Use only right front outlet of flusher for all railroad car filling operations. Keep all other outlets closed tightly at all times after sterilization. The nozzle on the right outlet shall be covered with a tight-fitting (rubberband or tape), clean, clear, plastic bag at all times when it is not in use. The fitting on the truck-filling hose also shall be so protected from the time that it is sterilized. Similar protection shall be afforded the fittings of the hose used to fill the railroad cars.

All portable water hoses used to water railroad cars from hydrants or temporary manifolds shall be protected at both ends by plastic bags tightly fitted, and shall be stored off the ground when not in use. In the yards where temporary hose is connected and used as a pipe system, care shall be taken so that the location of the hose couplings shall be staggered in relation to the car soilhoppers, in order to prevent sewage from splashing on the couplings. Hose connections for temporary pipelines shall be elevated on special wooden blocks which will keep the connection six inches off the ground. Every connection shall be protected by clear, plastic wrapping extending six inches each side of the fitting. When hose is connected, it shall be sterilized by flushing entire system with 100-ppm chlorine solution from filled 2,600-gallon flusher. System shall then be flushed with city water from truck, and all exposed fittings covered with clear, plastic bags to remain in place except when in actual use.

To insure some residual during all handling operations, it was also required that 1 ppm of chlorine dosage be added to the water in the tank trucks, despite the 0.2 to 0.4 ppm normally present in the municipal water supply.

To confirm and maintain the effectiveness of the aforementioned precautions, an extensive program was planned. Chlorine residuals were to be checked throughout the handling operations and at the taps in the cars. Frequent bacteriological tests were planned as the mainstay of the sampling program. Here, the great shortcoming of the Standard Methods for the Examination of Water and Sewage tube test for coliform organisms became evident. From 48 to 96 hours would be required for the completion of the test, during which time the water would constantly be consumed. Some of the trains would have departed before the bacteriological results were known! An ideal and challenging situation was thus created for the application of recently developed membrane-filter technics, which could reduce to less than one-third the time elapsed between sampling and reporting of results. It was believed that valuable field experience could be gained by using this new tool under emergency water supply conditions comparable to those which might exist in any large city during disaster or attack.

In view of the twofold objective of protecting the Inaugural residents of Pullman City and of testing the membrane filter under emergency field conditions, the District of Columbia Health Department requested the Public Health Service to participate in the investigations. The Environmental Health Center and the Division of Sanitation cooperated by supplying the necessary equipment and assigning a sanitary engineer who had participated in recent MF research and developmental work at the center, and other professional personnel.

It was agreed that, in order best to accomplish these objectives, each sample would be tested by both the conventional, fermentation-tube MPN method and the newer MF method. In this way, bacteriological control would be established, and it would be possible both to obtain the benefits of the quick results afforded by the membrane filter and to determine its suitability as a single control test under unusual or simulated emergency conditions.

Sample Collection and Methods of Handling

Samples were collected in sterile, wide-mouthed, glass-stoppered bottles,

of approximately 250-ml. capacity, that had been seeded with a few crystals of sodium thiosulfate in the usual manner. Pending the collection of samples, all bottles were protected with tight-fitting paper covers and were properly stored.

Sanitary inspectors, when collecting the samples, usually accumulated about 20 before returning to the laboratory. No special preservation measures were employed as, in most cases, analyses were started within two to three hours after collection. Where a backlog of routine laboratory work prevented this, samples were stored temporarily in a refrigerator.

During a three-day period commencing January 18, 207 samples were collected at representative points in each of the distribution systems, flusher trucks, and temporary pipe lines. Just after removal of the 51-ml. sample required for MPN and agar pour-plate tests, 100 ml. were withdrawn for the membrane-filter test.

Laboratory Procedures

Total Count

Standard agar plate counts were observed for each sample, incubated for 24 ± 2 hr. at 37° C.

Tube Tests

Limitations in availability of media, laboratory equipment, incubator space, and labor restricted the number of fermentation tubes to not more than five per sample. The majority of water samples to be examined were expected to contain no, or only a moderate amount of, pollution; therefore, presumptive coliform testing was chosen, to consist of inoculation of five 10-ml. portions of each sample in lactose broth.

All presumptive gas-positives (those tubes showing any amount of gas in 48 hours upon incubation at 35° C.) were confirmed in 2 per cent brilliant green bile. The EMB streak-plate technic was used to supplement the liquid-confirmatory procedure. The examinations were not carried out to the completed stage.

Membrane-Filter (MF) Tests

The wide use of membranes for bacteriological analyses by the Germans during World War II was largely necessitated by the critical shortages of laboratory equipment and agar. The results of their work stimulated interest in this country in postwar years, leading to the successful application, simplification, and improvement of this technic.[1-5] Basically, the method entails the deposition of organisms on the surface of a thin, highly-porous disc (membrane), and their subsequent surface growth by the utilization of liquid nutrients diffusing upward through the membrane pores, the axes of which are normal to the plane of the disc. The domestic membranes previously described[4] were used for these investigations.

Prior to use, the membranes had to be sterilized. Ethylene oxide has been used for this purpose in the past, but more recent studies by the Public Health Service have indicated that, when properly executed, heat sterilization can be employed, apparently without seriously affecting the unique characteristics of the filter membrane.[4] For this project, about 12–15 membranes, individually separated by paper blotters, were placed in standard Petri dishes and autoclaved for 10 minutes at 10 pounds per square inch (psi) (115.5° C.). Steam was then exhausted from the autoclave to prevent damage of the membrane.

The nutrient pads were prepared prior to the actual sampling by placing them in a large beaker of distilled water and autoclaving for 15 minutes at 15 psi. They were subsequently drained, dried in an oven at 80 to 90° C., and aseptically stored in sterile containers

until needed. This simplified procedure replaced the one previously described,[1] which was used when only inferior quality pads were available.

The filter apparatus used for this investigation was of a commercially available type, and was prepared and employed essentially in the manner described by other investigators.[1, 5] All filtrations were performed in the District of Columbia laboratory, where vacuum lines were available to facilitate sample filtration. Two filtration assemblies were used simultaneously. At the start of each day's operations, each filter-holder apparatus was individually wrapped in Kraft paper and autoclaved for 15 min. at 15 psi. Between individual sample filtrations, the vital parts were rinsed (with the membrane still in place) with sterile phosphate buffer dilution water (about 100 ± ml.) to wash away and deposit on the membrane any specimen droplets retained on the inner walls of the receptacle. When properly executed, the carry-over of contaminants in this procedure is insignificant for ordinary examinations. The inoculated membrane was then aseptically removed from the support.

Sample portions of 100 ml. were filtered in all cases for the following reasons: (1) it was anticipated that the high disinfectant dosage rates would yield samples with low bacterial counts; (2) sufficient graduates to handle the number of samples expected were lacking and clean, sterile, standard dilution-blank bottles, marked at 99 ± ml., were available in sufficient number to assure for each sample an accurate measurement, aseptically accomplished; (3) it was believed that this quantity would be sufficient to detect the relatively small contamination anticipated, while, on the other hand, the portion would not be large enough to produce overgrowth on the membranes.

The technic employed for coliform analyses was that developed at the Environmental Health Center. This procedure minimizes the shock effect of the inhibitory reagent, and permits superior coliform recovery. Essentially,

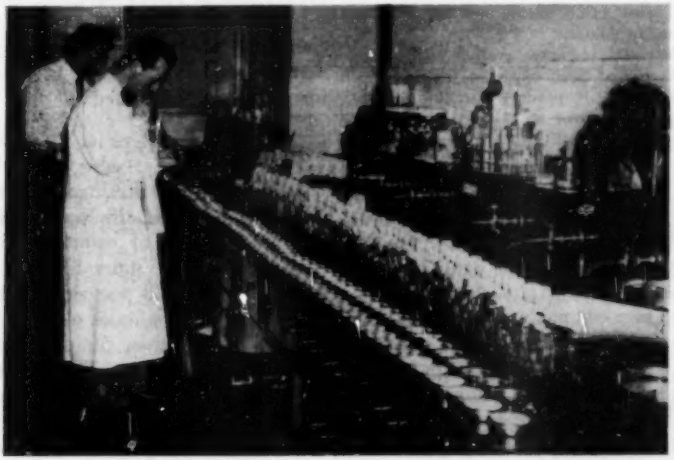


FIGURE 2—Aseptic removal of inoculated membrane from holder-apparatus support. Addition of preliminary enrichment medium to nutrient pads (in ointment-box incubation container)

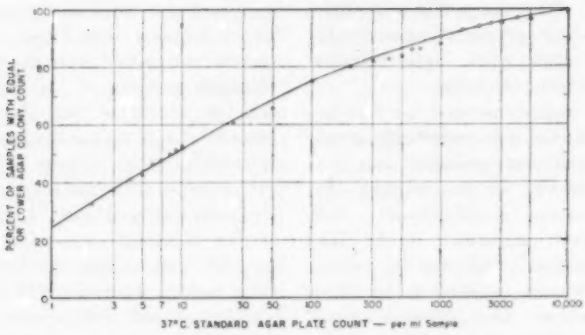


FIGURE 3—Distribution of samples in relationship to total colony counts

it consists of a 2-hour incubation on Difco's dehydrated M-enrichment medium, and 16 ± hours of additional incubation on modified EHC Endo broth prepared as described by Kabler,[3] Clark, et al.,[1, 2] with the following modifications later developed and adopted at EHC:

1. The lactose solution was prepared separately, autoclaved for 10 min. at 10 psi, and added to the basal medium just prior to use. It was added in the same proportion (3 ml. of 20 per cent lactose to 30 ml. of basal medium) just prior to the addition of the fuchsin-sulfite mixture.

2. Only 7/10 of the average dye-sulfite ratio, which had been observed through biological titration [4] to produce a range of optimum results in terms of coliform production and sheen characteristics, was used.

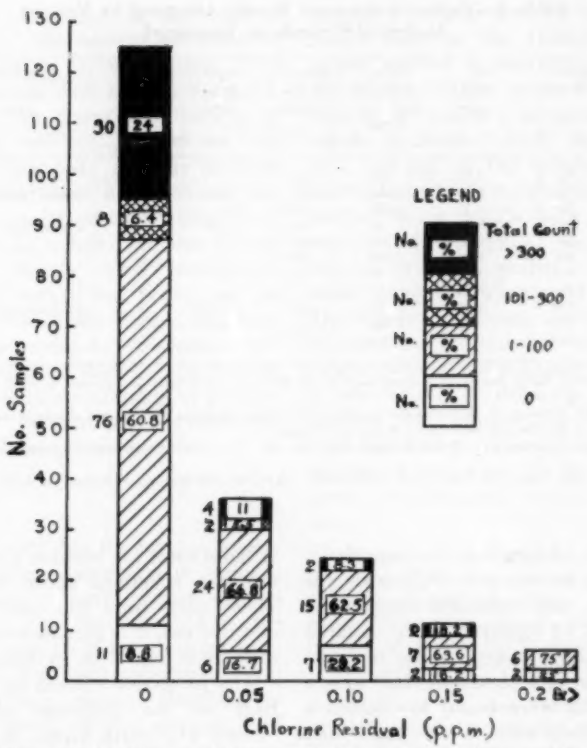
The literature [5] indicates the desirability of incubating the membranes in a highly-humidified environment at the temperature of optimum growth — approximately 35° to 37° C. for coliforms, and also suggests methods by which this can be accomplished. Work by the Public Health Service and others in connection with field applications of membrane filtration (in press) has shown that a tin box (ointment tin or pill box, e.g.) can be used in place of the usual glass Petri dish without any apparent toxic effect, reduction in quantitative coliform recovery or degradation in sheen characteristics. Two-ounce tin boxes were used, and yielded satisfactory results—Figure 2. These containers have other advantages—they are inexpensive and readily available, and can be autoclaved. Moreover, they can be used in the conventional-type, hot-air, 35° C. incubator available in the laboratory, since they are sufficiently tight to prevent evaporation of the nutrient broth and drying of the membrane, and to retain sufficient moisture for optimum culture environment. These containers were simply stacked in an inverted position in the 35° C. incubator for the periods specified.

Results

Total Counts and Residual Chlorine

Figure 3 shows the cumulative per cent distribution of samples, with respect to 37° C. standard agar plate counts. Almost 25 per cent of all samples tested had counts of one or less per ml., and more than 50 per cent had counts of 10 or less. The upper limit of total count was recorded for two samples at 12,000 colonies per ml.

Figure 4 shows the distribution of samples with respect to residual chlorine measured at the sample collection site. More than half of the samples had no



Note: 204 Samples—no chlorine residual recorded for three samples

FIGURE 4—Chlorine residual—total count.

residual chlorine, and less than 10 per cent had a residual in excess of 0.1 ppm. Practically all samples with a colony count in excess of 300 per ml. had no, or merely a trace of, chlorine when collected.

MPN and MF Tests

Table 1 shows the results obtained by each of the various laboratory technics employed. Only 11, out of 207 samples tested, produced any gas in lactose within 48 hours. Of these, only one (sample 110) was positive within 24 hours, with all of the five 10-ml. portions showing a rapid rate and large amounts of gas production. Within 48 hours, three of the 11 samples were confirmed in brilliant-green lactose bile and on eosin methylene-blue agar.

By the filter method, two of the 207 samples developed colonies having a metallic sheen characteristic of coliforms and intermediates on the differential medium; these were also positive for coliforms by the MPN method. Approximately 120 well defined surface colonies with excellent sheen characteristics were counted on the membrane upon which the 100-ml. portion of sample 110 had been concentrated. Since the corresponding MPN was indeterminate, quantitative comparison could not be made. Those colonies with

Table 1—Postive Laboratory Results Obtained by Various Analytical Procedures Employed

Sample Number	D.C.* Water	Cl_2 Res. ppm	37° C. Standard Agar-plate Count per ml.	MPN † 48 hr. Presump. per 100 ml.	MPN 48 hr. Conf. per 100 ml.	MF ‡ Count	EMB ** Colony Type
102	No	0.05	230	16	..	0	
110	No	0.0	2,100	16+	16+	120	Typical aerogenes
161	No	0.05	9,000	2.2	..	0	
163	No	0.05	46	9.2	2.2	1	Typical coli
166	No	0.05	250	2.2	..	0	
167	No	0.05	3,600	2.2	..	0	
176	No	0.15	51	9.2	..	0	
217	Yes	0.05	8	2.2	..	0	
263	Yes	0.05	0	2.2	2.2	0	Atypical aerogenes (?)
277	Yes	0.05	3,000	5.1	..	0	
305	Yes	0.0	100	2.2	..	0	

* D.C. Water = Water loaded on railroad cars in the District of Columbia as opposed to water already in cars upon arrival.

† MPN 48 hr. Presump. = Most probable number of coliform organisms per 100 ml. of sample as determined by Standard Methods for the Examination of Water and Sewage.

‡ MF Count = Number of coliform organisms per 100 ml. of sample indicated by the membrane filter method of analysis.

** EMB Colony Type = Probable type of bacterial colony as identified by culturing on eosin methylene-blue agar plates.

sheen were observed to be capable of fermenting lactose and BGB with gas production, and exhibited characteristics typical of coliforms when cultured on EMB agar plates. Two replicate 100-ml. portions of sample 163 with a MPN of 2.2 were found to contain a single coliform each by this procedure.

The two cases cited were the only ones for which coliform-like colonies developed on the membrane. Sample 263 (with a MPN of 2.2 per 100 ml.), the only local sample suspected of containing coliforms, failed to produce any coliform-like colony within 24 hours by the filter method.

Field Observations

Three Health Department inspectors were assigned to collect the water samples for bacteriological analysis from taps in the cars, the flusher trucks, the filling hoses, and the temporary pipe lines. On-the-spot chlorine residual determinations were made in each case.

Where the temporary pipe lines were laid, it was noted that metal discs welded to the hose couplings were used as substitutes for wooden blocks to elevate the couplings above the ground. These discs were too small and, for effective use, it is recommended that the discs be at least 8 in. in diameter.

The protection offered by the plastic bags on the couplings and fittings seemed well worth while. It is believed that this innovation not only provided a marked degree of physical protection to the pipe and hose lines, but (probably equally important) considerably impressed the laborers carrying out the operations with the care required for water-handling. Some of the covers, however, did not fit tightly enough.

Chlorine-residual tests made on the trains shortly after fresh water had been loaded rarely showed any residual, despite the 1-ppm. dose applied to the flusher tank-trucks, indicating that the car tanks contained materials exerting a high chlorine demand. The addition of chlorine to the city water was well warranted; it is believed that the dosage might even be increased to 1.5 or 2.0 ppm in the future.

The value of the membrane filter was

excellently illustrated in the case of sample 110. This sample was collected from a Pullman car on January 18 at 11:40 a.m. At 8.00 a.m. on the morning of the 19th, it was quantitatively reported as coliform-positive by the membrane-filter test. Actually, coliform colonies could have been detected several hours sooner, perhaps within 12–15 hours after the sample had been filtered. Railroad officials were immediately called and, within two hours, the car tank from which the sample had been drawn was emptied, disinfected with chlorine solution, flushed, and refilled. It was not until the morning of January 20 that the Standard Methods confirmed test verified the contamination.

Discussion

It is believed that the foregoing sanitary precautions, laboratory procedures, and discussions have greater general significance than that attached to the particular instance of use reported here. This wider field of application might well encompass natural disasters to populated areas, civilian defense, and military field use. In supplying water under such emergency conditions, it is necessary to insure the safety of the supply with a minimum of misdirected or unneeded precautionary or control measures. The precautionary sanitary measures used in the Pullman City water supplies were based on what was considered to be sound engineering practice and judgment. Further experimentation with modified sanitary precautions that can be readily evaluated by use of the membrane filter could be used to develop minimum sanitary practices consistent with satisfactory, emergency water-quality control.

Relatively few people were required to furnish and control a wholesome supply of drinking water to approximately 8,000 persons temporarily housed on trains. With the considerable amount of rolling stock in and near all major cities in the United States, a speedy method of providing emergency shelter to civilians made homeless by natural or military disasters is indicated. It seems entirely feasible that, with the use of the membrane filter, small compact laboratories that could be carried on a man's back would be capable of providing bacteriological control over the quality of drinking water provided by makeshift means. The highly satisfactory sanitary results afforded by the exercise of relatively simple precautions indicated that, given a safe source of drinking water, the dangers of contamination associated with the transportation, handling, and storage of that water to provide emergency supplies are readily surmountable.

ACKNOWLEDGMENTS—The cooperation of the following members of the District of Columbia Health Department is acknowledged: William E. Cary, Jr., director of the Division of Public Health Engineering, and staff; Dr. John E. Noble, director of the Division of Laboratories, and staff, for performing the MPN and agar-plate technics, as well as for their help in organization and execution of the MF investigation. Also, appreciation is extended to William Sitler, sanitary engineer, and E. Dave Harward, J. A., sanitary engineer, both of the Public Health Service, for their assistance, and to the personnel of the Division of Sanitation and Environmental Health Center for their helpful advice, the loan of equipment, services, and other material contributions.

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An Opinion Survey of the American Public Health Association by New York State Public Health Association Members

HERMAN E. HILLEBOE, M.D., F.A.P.H.A., and WALTER E. BOEK, Ph.D.

Here is Bobbie Burns's two-century old wish—"Oh wad some power the giftie gie us/ To see oursel's as others see us!"—come to life. Your own critical reactions to these reported responses will be of interest to the Association leadership.

✣ During the 1952 Annual Meeting of the American Public Health Association the results of a brief membership opinion survey carried out by the Association were discussed by persons from all over the country. Approximately 10 per cent of the membership replied to the questionnaires sent out. Representatives from the New York State Department of Health who were present felt that the public health work in their state might be improved and the American Public Health Association's program might benefit from the constructive suggestions and opinions of public health workers in New York State.

Therefore, a detailed questionnaire was developed and sent to 305 public health workers who were likely to be members of the American Public Health Association. These people were in the New York State Department of Health and the county and city health departments outside New York City. A considerable amount of time was devoted to filling out the questionnaire by each recipient. The conscientiousness of these people in replying was revealed in the prompt return of the questionnaire, the large number of extra comments added after questions, and the small number of questions left unanswered throughout the questionnaire.

A draft of a questionnaire for securing pertinent data about members' participation in the APHA and their opinions toward and knowledge of its various activities or policies currently being developed was constructed and mailed to a pretest group of 23 persons holding diverse positions in official state, county, or city health departments. These pretest responses were utilized in developing the final questionnaire which consisted of approximately 100 queries.

Ninety-nine per cent of the 305 responded. Of these 301 respondents, 204 were found to be members of the APHA. The responses of twelve nonmembers who filled out the questionnaire were analyzed with the members because they either had a temporary lapse in membership or were planning to join soon. Forty-three per cent of these 216 had fellowships, which is higher than the national ratio of Fellows to members. Physicians made up 41 per cent of the group; nurses, 23 per cent; and engineers, 16 per cent. The rest were statisticians, health educators, nonmedical administrators, nutritionists, dentists, and other types of health workers. The APHA participation may be indicated by these data: only 15 per cent had not attended any Annual Meeting during the last seven years; one-fourth had taken part in the last three years by activities, such as reading papers; 13 per cent had papers published in the Journal during the last

three years; 11 per cent are now on sectional committees, and 8 per cent on other committees.

The data were organized and discussed in a full report [1] under these nine areas: (1) Functions of the APHA; (2) Annual Meeting; (3) Journal; (4) Fellowships versus Memberships; (5) Professional versus Nonprofessional; (6) Voting; (7) Sections in the APHA; (8) The APHA and Medical and Health Legislation; and (9) State of Knowledge about the APHA. The same pattern will be followed in presenting the main findings in this summary report.

Section 1. Functions of the American Public Health Association

Two questions asked in an attempt to determine a general over-all opinion of the Association will be discussed before more specific functions are presented. The first of these was whether or not respondents felt they got enough out of the Association to justify paying dues. Forty-four per cent said, "Yes"; 14 per cent reported, "Yes, but it is in an indirect manner"; and 12 per cent felt they received more than what they pay in dues. On the other hand, 10 per cent answered "No"; 6 per cent "No, but participate because it is the right thing to do"; and 1 per cent "No, but participate because my associates would wonder why I didn't." Ten per cent felt they got just enough out of it, while 3 per cent did not respond or gave other answers. Thus, out of every 10 people, seven felt that the APHA dues were justified in view of their returns, two thought they were not, and one was somewhat indifferent.

A similar question asked them to compare it to other organizations they pay dues to. Nearly two-thirds of them said they got as much out of APHA as the other organizations and the others said "No, they did not." Nine out of 10 credited APHA with being "important to them" as far as providing up-to-date scientific information, although more than one-half did not recall or did not receive any new scientific data during this past year when asked more directly. One of those saying they did not receive any new scientific data from the APHA this past year wrote, "Nothing I couldn't have picked up elsewhere," and another stated, "I get what is needed from our State Health Department." Of the remaining 90 people listing research, 19 reported it to be Hammond's and Howe's work on polio. One of these pointed out, however, "It must not be overlooked that the same would have been forthcoming in the Journal of the American Medical Association if one had not attended the meeting. The paper was not published in the Journal of the American Public Health Association." Thirteen of the 90 listed research on fluoridation and the rest noted various other research reports.

The importance to the respondent of the continuing review and development of standards of performance in public health carried out through Standing Committees, Special Committees, and Sections was asked. "Very important to me" was checked by 36 per cent, "Important to me" by 53 per cent, and "Not important to me" by 5 per cent. Three per cent responded "Don't know," and 1 per cent did not know about this function and 2 per cent did not answer. One of those who said it was not important reported that he had not been able to translate such theoretical standards into practical procedures for his own work. Another who felt it important would like to see this function greatly improved.

Research in public health, "where the Association has professional competence," has been listed as a core activity of the American Public Health Associa-

Dr. Hilleboe is commissioner and Dr. Boek is assistant to the commissioner, New York State Department of Health, Albany, N. Y.

tion.[2] Only 15 per cent felt that this activity was "Not necessary in their case," although another 18 per cent checked as their answers, "It is not competent to carry out the kind of research that is needed," or "Studies might better be carried out by universities and other research groups."

Later in the questionnaire respondents were asked to name the studies they knew APHA to be engaged in at present. It was thought this question might bring out more realistically the value of such research and it also might show the extent to which members were acquainted with the work of the APHA. Even though only a small proportion of respondents felt the research was not necessary, over one-half, 51 per cent, could not recall any studies when they filled out the questionnaire. Sixteen per cent named only one study; eighteen, two; six, three; and 2 per cent, four or more.

The 93 persons who listed studies named about 35 different projects or phases of them. The largest number, 30, indicated projects relating to public health salaries and personnel needs, including standardization of qualifications and testing programs. Sixteen people noted health department medical care programs, 12 housing studies, and 10 projects in administrative practice. The rest named other researches.

Many functions of the APHA are accomplished through committees and thus participation in them is an important role of members. All 216 respondents were asked whether or not present methods for selecting committee membership are satisfactory. A large majority, 63 per cent, did not know how they were selected and 4 per cent did not respond. Over one-fourth, 28 per cent, thought the present system was satisfactory and 6 per cent said "No."

Several suggestions were made to improve the procedure for selecting committees. Among them were these: "Membership should be spread more among qualified membership to bring more people into activities. There are two many repeats among a small group." "It should be more democratic instead of being apparently influenced by a clique." "I suggest canvassing of prospective committee members rather than the choosing of friends by chairmen." "I would like to see part-time people get some representation."

Section 2. Annual Meeting

The Annual Meeting is probably the largest single activity of the American Public Health Association and the yearly climax for many groups. Questions were included in this survey to determine the amount of participation in annual meetings during the last seven years. Only 15 per cent had not attended any of these and 5 per cent had attended all.

One of the questions about the Annual Meeting was this: "Most people can remember one meeting or session of the American Public Health Association that they feel was superior to others. Would you think about your experience and describe the type of meeting it was?" Answers by the 135 making comparisons sometimes referred to the total program of an Annual Meeting, but most often they wrote about specific parts of it. Twenty-four felt the meetings were all the same or gave comments such as: "Both sessions were highly informative," or "Difficult to choose, there were so many." The largest number, 30, liked audience participation-type meetings such as symposiums or panels where discussion was part of the program. These comments were among those given: "A symposium on mental health in the 1949, New York City meeting, which brought together psychiatrists, anthropologists, and sociologists," and "The panel discussions are 'super' to me."

Meetings presenting newer develop-

ments, such as those on fluoridation, gamma globulin, and the use of penicillin, were selected as best by nine respondents. The rest of the 135 varied widely in the type of meetings they desired.

Eight out of 10 considered the Annual Meeting important as a place where cross-fertilization of ideas can take place, while one-half noted that it was an important place to renew acquaintanceships and visit with friends, "Especially for those who have never been away from home base," said one. Over three-fourths felt it to be useful for meeting new people and one-fourth said the meeting was important as a means whereby they can make known what they are doing and gain recognition for it. One regarded the Annual Meeting as, "Not important to me, since I have never availed myself of this privilege." Another wrote, "If I am doing anything worthy of note it will be discovered without my trying to peddle it." A third felt, "I'm not dependent on that for publication of worthwhile efforts."

Some members of the American Public Health Association have expressed concern over dissemination of papers and reports presented at the Annual Meeting. Part are accepted for publication in the Journal and the rest either do not appear or are published elsewhere. A suggestion was made that papers read at the Annual Meeting be published as "Proceedings" each year in order to free the Journal for other papers and to make more of them available. Twenty per cent of this New York State group of APHA members did not want this to be done: they thought the present arrangement was satisfactory and several deemed many papers not worth publishing. Forty-six per cent thought it was a "good idea" or "worth trying." An additional 24 per cent said whether or not it should be done depends on conditions such as these: "If the quality of papers not given at the meeting is high." "If not too costly." "If all papers would be available in printed form more rapidly." "Good idea if made available to members who could not attend." Other suggestions similar to these were made by the remaining 6 per cent: "Probably a resumé of all papers could be published as Proceedings and some papers selected for the Journal."

Section 3. The American Journal of Public Health

Attitude toward the Journal was secured with the use of six questions. The first was general in that it asked whether or not the articles appearing in the Journal appealed to respondents. About seven out of 10, 67 per cent, reported that some articles do while some do not. Seventeen per cent were willing to say that most of them appeal to them, while 15 per cent checked "Very few appeal to me." One per cent did not answer or did not know.

An attempt was made to have the extent of Journal reading registered. Most persons, more than four out of five, 83 per cent, glance through it and read articles of interest; 7 per cent read it thoroughly; 2 per cent use it only as a library reference; 6 per cent read it only once in a while; 1 per cent read mostly just announcements and notes; and 1 per cent did not respond or said they did not read it. A few other comments were added such as, "I have copies bound for future reference."

Thirteen per cent of the 216 reporting had papers published in the Journal during the last three years. Of these, 21 had one paper published; six, two; and two had three appear in the Journal. Even though 86 per cent did not have papers published during the last three years, only 45 per cent believed that the Journal as a place where "I can publish some of my work" was not important to them. "Very important to me" was

checked by 2 per cent and "Important to me" by 36 per cent. Two per cent did not respond; 2 per cent gave other responses; and 14 per cent said they did not know how important it was to them.

The next question to be discussed in this section is: "Should the Journal be a 'scientific' journal directed toward informing membership of scientific advances and how they were validated or should it be directed toward describing technics for furthering public health programs?" Nine per cent leaned toward having the Journal scientific. One wrote, "I believe professional journals should be records of scientific events and advances that will keep public health readers abreast of public health events. A special section can be devoted to technics if they are of value." Another commented, "Primary responsibility to membership should be furthering public health programs with scientific information."

Seventeen per cent thought the Journal should be devoted to description of technics. One of these reported that his own interests would suggest that it be more scientific, "but other journals are available for this purpose and not for the latter." Two-thirds, 65 per cent, wanted a balance of scientific articles with those describing public health technics; 2 per cent gave other responses; and 7 per cent did not answer. Many comments were written by those wanting both types covered by the Journal. "Why can't it be both. I think it is now and I would favor a continuation of this dual function." "It should not be too scientific, since it is sent to all members regardless of training. I think it is good as is because most of it is in readable style."

Section 4. Fellowships Versus Memberships

The advantages and disadvantages of having two types of participation in the APHA has been the subject of much informal and formal discussion during the last few years. Receiving a fellowship has been conceived both as an honor and as the beginning of added responsibility in affairs of the APHA. Several questions were designed for recording attitudes in this area. The Fellows will be compared with all other respondents since they, because of their fellowships, may have had the extra responsibilities.

The first question asked whether or not they felt it was right that only Fellows can serve on the Governing Council and be officers in their Association. One-half (54 per cent) thought it was right; whereas, 34 per cent felt it was not right, and 4 per cent more commented that it was not right because it was not democratic. Many comments were written in after this question. The general feeling of those who said it was right and wrote additional comments was that, "those qualified for such appointments can become Fellows very easily." Most comments of persons saying "No" were about like these: "How is a Fellow of four years more qualified than a member of four years," and "I see no need for two different membership groups." One person feels that this practice tends to exclude younger members "who are closer to the field. Their presence in limited numbers on the Council might give them good administrative training and at the same time keep the Council in touch with field problems."

A comparison of the attitude of Fellows with members shows a higher proportion of Fellows thinking it right that only Fellows can serve on the Governing Council and be officers than did members, 78 compared to 39 per cent.

Having policies of APHA determined only by Fellows was satisfactory to two-thirds, while most of the rest felt it was not. As would be expected, a higher

proportion of Fellows than members were in accord with this practice.

Attitudes toward having all members vote or restricting it to Fellows was secured with the following statement and question: "Voting privileges in your Association used to be limited to Fellows and voting was only at the Annual Meeting. Now all Members can vote and most voting is by mailed ballot. Do you think the present system is better or should we return to the former?"

Sixty-nine per cent checked the response, "Present system is better"; 8 per cent checked, "It could be improved even more"; and 6 per cent stated "The former system would be better." The rest did not express an opinion. There was virtually no difference between the proportion of Fellows who felt the present system was better and the proportion of members giving that reaction. But 13 per cent of the Fellows compared to only 1 per cent of the members, reported restricting voting to Fellows as better. One who liked the present system remarked, "Because I voted this year I feel I participated," and another saying more improvement was needed suggested publishing brief biographies of candidates.

Early in the questionnaire respondents were asked whether or not they knew the difference between a member and a Fellow. Seventeen per cent did not know what it was and many others gave partially correct answers.

Section 5. Professional Versus Nonprofessional

Proposed limitations on membership according to whether or not an individual was a professional public health worker have been advanced in many discussions. Yet, the definition of a professional person in public health work is based on a great variety of criteria. Several queries to elicit opinions in this area were included.

The first question asked was what in general is the difference between a professional person in the public health field and a nonprofessional. There was very little variance between physicians and others on their response to it. Eighteen per cent of all respondents considered a professional person to be actively engaged in or retired from some phase of public health work. One wrote, "A professional group is a collection of persons who possess certain common skills and methods as well as certain common problems. Professionalism is a matter of degree."

Forty-eight per cent stated that a professional person is one who is qualified through education and experience in public health. Three in this group felt the education should be graduate or equivalent training; two wanted academic standing in a discipline; and two others thought responsibility of the job held should be included in the criteria. Five per cent listed both education and active public health work as necessary before a person is a professional. "Professional" includes all but the stenographic and clerical people, according to 4 per cent. Two per cent said the professional has a better understanding of goals and is more dedicated to his work. One of these wrote, "It is attitude only. The professional wants to give service while the nonprofessional wants to earn money." The rest gave other responses.

Still later in the questionnaire respondents were asked, "Should nonprofessional people, according to your definition of nonprofessional, be admitted to membership in APHA?" About two-thirds, 64 per cent, felt nonprofessionals should be; 22 per cent said no; and 10 per cent did not know. A somewhat higher proportion of physicians than of the others, 26 per cent compared to 19, did not feel nonprofessionals should be admitted. Seven out of 10 of the 139 respondents in favor of nonprofessional members were

of the opinion that all Sections should be open to the nonprofessionals, while the rest would restrict it to various Sections.

Prior to answering questions about whether or not nonprofessional persons should be admitted to membership, respondents were asked, "What percentage of the membership of the APHA do you think is nonprofessional according to your definition?" About one-fourth of the 216 were in each of these ranges, 0–10, 11–30, and 31–100 per cent. The rest either did not answer or said they did not know. A significantly higher proportion of physicians thought that a higher proportion of members were nonprofessional than others.

A general question as to whether or not nonprofessionals should be allowed to vote for officers and members of the Governing Council found over one-half favoring permitting them to vote. Respondents were expected to use their own definition of nonprofessional. A little more than one-fourth opposed such voting privileges.

Section 6. Voting

There has been discussion among members of the APHA on problems associated with voting procedures. Several questions were constructed for recording knowledge and opinion in this area. The first, a general one, was: "Are there any abuses of the voting privilege in our organization that you know about?" Nine people said yes there were, and 27 checked, "I do not wish to give an opinion." This indicates that 36 or 17 per cent may have known abuses.

When asked to describe the abuses, 10 people reported. Six of these objected to allowing a ballot to be counted if less than the full 10 votes were registered on it. In voting, a list of nominees appears on the ballot and members are expected to vote for a maximum number, usually 10. One person commented, on the basis of his experience on the Nominating Committee, "In nominations, one section may list only members from their section." The following comments were made by the others in the space for listing abuses: "Nonpublic health workers can vote"; "Not an abuse, but it would be preferable if an attempt were made to get the voters to know more about the candidates prior to voting"; and, "You will always have a certain amount of dishonesty. If I knew how to combat it, my opinion would have been heard long since."

Near the end of the questionnaire opinions were solicited about the present practice of allowing members to vote for as many candidates up to 10 as they wish. As can be seen in Table 1, the largest number in giving their opinions (28 per cent) would require that ballots be voided unless 10 were chosen. Some of these wanted a brief biography to aid in selecting those not known to them. One wrote, "Since all nominees may be assumed to be satisfactory, 10 votes should be required." Another commented, "The present system is at least in error with the spirit of the parliamentary system. When several candidates should be elected from a group of persons, a ballot should not be valid and acceptable unless the required number of vacancies are filled by the expressions of the voter on the ballots."

The next largest aggregate of opinions centered around the idea that it is better to vote for less than 10 than to check names of people unknown to them. As one said, "To require voting would result in equally bad blind voting." Seven per cent were in this classification. According to 6 per cent, this system is an acceptable democratic procedure even though it may "work a hardship on some candidates." One wrote, "Every person voting for less is voluntarily sacrificing a part of his

Table 1—Respondents Compared by Their Opinion About Allowing Members to Vote for Less Than the Maximum Number Permitted on One Ballot

Opinion	Number	Per cent
Void the ballot if 10 are not named	59	28
Better to vote for less than 10 than to vote for those unknown to member	15	7
Allowing a member to vote for less than 10 is democratic and his privilege	12	6
This is not too serious. Keep same system	11	5
It is unfair. No suggestions for changing it were given	10	5
Mixed feeling. If all 10 are required some will need to vote blindly	11	5
Something should be done to improve it. No suggestion about the type of change needed	13	6
Other responses	29	13
No opinion or suggestion	24	11
Do not know	16	7
No answer	16	7
Total	216	100

voting privilege, which he should be allowed to do."

In another question the solution to this voting problem that members be required to vote for 10 nominees before their vote could be counted was suggested to the respondent. Forty-three per cent agreed with this possible solution, although a few desired that "the whole business be studied." Over one-third (34 per cent) would have it remain as is; 8 per cent gave other responses; 4 per cent said they did not know; and 11 per cent did not respond.

Some concern had been expressed about the Governing Council membership. To record opinion the following statement and question were constructed:

> In looking at the makeup of the Governing Council of the APHA, it can be seen that there are 100 members; 30 of them are elected by the membership, 10 each year for three-year terms. The other 70 come from the Sections and the Affiliated Branches and almost always serve one year. Some people feel that because they serve only one year and generally attend one meeting many of those 70 Governing Council members hardly know what the APHA is doing. What do you feel about how the 100 members of the Governing Council are selected?

The majority wanted the 70 members from the Sections to have three-year terms. Many of these suggested rotation to prevent all of them from being replaced in any one year. Many of these thought one year was insufficient and that two years might be better. Only about one out of 10 felt that the present system was fine. Some of them noted that many Governing Council members usually serve more than one year and one felt it was "better than having 70 members for three years and some never have this opportunity to become acquainted with what the organization is doing." According to four, the organization seemed too large and complicated with the 100 Council members. One asked: "Would not the Governing Council do a more efficient job if its size were reduced?" Another

Table 2—Respondents Compared by What They Thought Should Be the Major Functions of a Section

Function	Number	Per cent
Inform Section members on current knowledge in their specialty	36	17
Develop and promote its special interest and integrate it with others	31	14
Provide a "home within the organization" for discussing common problems and for promoting professional advancement	22	10
Represent area of interest in policy making and in publications	15	7
Program planning for annual meeting	14	6
Provide opportunity to people with common interest for exchanging ideas	9	4
Further knowledge of specialty and formulate standards of research	8	4
Improvement of public health with emphasis on sectional contribution	7	3
Other responses	11	5
Do not know	46	22
There should not be Sections	3	2
No answer	14	6
Total	216	100

suggested that APHA should "do away with the superstructure on top of Governing Council and reduce it to 45."

Section 7. Sections in the American Public Health Association

The meaningfulness of Sections in the APHA has been questioned by some members. It was therefore felt desirable to secure opinions of people in this New York State study about such divisions. A general indication of satisfaction with Section participation may have been achieved with the question, "Have you felt at any time that you would like to be a member of another section?" Over one-fourth, 27 per cent, answered yes and 5 per cent were not sure. Nine per cent were not satisfied when asked specifically about their present situation.

Table 2 contains opinions of the 216 respondents about what ought to be major functions of a Section. Keeping Section members informed on current policies, practices, procedures, and scientific knowledge and research in the field, as well as application of knowledge to public health, were the most frequently given opinions. Two of the 36 giving responses classified in that way said, "It should be a way of acquainting all parts of the country with developments in different geographic areas," and "To develop and maintain a record of activities and new developments in the particular field in which the Section represents the Association."

The second and most predominant idea given by 31 was that the Section's function should be to develop and promote its special interest and then to integrate it with other sections. A "home within the organization" or a "meeting ground" was desired by 22 where those

with common interests could consider mutual problems and where their professional advancement could be furthered. Fifteen thought the function should be to represent their area of interest in the policy making of the APHA and with regard to an adequate share in publications. Planning the program for the Annual Meeting was stressed by 14. A seemingly large proportion, more than one out of five, admitted they did not know what the functions of a Section were.

The elimination of Sections would be an extreme type of action and members' attitudes toward it might be considered in the APHA policy determination. More than six out of 10, 63 per cent, do not feel Sections should be eliminated, while only about two out of 10 would have them done away with. One of those agreeing added: "I may be ignorant of important benefits derived from the present system but my opinion is this: Some classification into Sections is probably necessary for the purpose of annual meeting program planning, etc. However, I doubt that many members have special allegiance to their Section. One merely attends those meetings that seem most interesting or pertinent to one's work." One respondent disagreed with eliminating Sections for this reason, "As the interests of the various Sections are very diverse (even though all are concerned with public health), it would seem that, while there should be a common meeting ground, there is also a place for individual groups to work as units."

Later attitudes were solicited about less drastic measures than just eliminating Sections. The question and its preceding statement were:

> Some feel that the APHA should do away with present Sections which are based on disciplines and have Sections based on programs such as these: Communicable Diseases, Chronic Diseases, Public Health Administration, Occupational Diseases, etc. Others feel that the present Sections are best, while still others think the Sections should be left as they are but the program for the Annual Meeting should be divided by program topics and not by disciplines. What is your feeling about this?

Possible responses were listed after this question with additional space for comments. A majority favored keeping present Sections but changing the Annual Meeting to make it interdisci-

Table 3—Physicians and Nonphysicians Compared by Their Attitude About Sections

Opinion	Physicians		Nonphysicians		Total	
	Number	Per cent	Number	Per cent	Number	Per cent
Keep present Sections but change Annual Meeting so it is interdisciplinary	41	47	75	61	116	54
Leave everything as it is now	22	24	23	18	45	21
Do away with present Sections and substitute Sections based on programs	15	16	5	4	20	9
Do away with Sections altogether	1	1	6	5	7	3
No opinion	3	3	4	3	7	3
Do not know	1	1	3	2	4	2
Other responses	4	4	3	2	7	3
No answer	4	4	6	5	10	5
Total	91	100	125	100	216	100

plinary and focused on problems as Table 3 indicates.

Section 8. American Public Health Association and Medical and Health Legislation

A critical point in a professional organization comes when it is faced with the question of taking a stand regarding legislation. This is particularly true when the organization does not have such a role as its primary function. Health legislation has been in the forefront of many recent political campaigns. It, therefore, would be expected that the APHA whose membership includes experts in all fields of health would be called upon for advice by lawmakers.

General questions in this area were asked of the 216 respondents. The first concerned past activities of the APHA. Two-thirds of the total group did not know whether or not their Association actively supported or opposed any federal legislation this past year. One-fourth thought it had and one-twelfth said it had not.

When asked earlier in the questionnaire, "Should your Association represent you in federal hearings where health or medical legislation is being discussed?", it was clearly seen that most of the New York State Department of Health members wanted such representation. Eight out of 10, 81 per cent, wrote "Yes" to the question; 8 per cent, "No"; 9 per cent, "Don't know"; 1 per cent gave other replies; and the remaining 1 per cent did not respond.

Among the comments by those desiring that the APHA represent them were these: "I think so in relation to medical care and health protection; probably not in regard to interests of any group of members." "Yes, but there should be engineering and other representation on the Council when decisions to speak on federal legislation are made." "Officers of the APHA should appear at hearings to give their views as experts, but not as representatives."

Some respondents who wished to have the APHA represent them desired that true representativeness be determined before testimony was offered. Some wanted to make sure that the legislation was for the good of all people in America and others suggested staying out of medical care aspects. Three per cent disagreed with this function and another 4 per cent were neutral or gave no opinion. Twelve per cent checked the response, "I did not know about this function of the APHA."

Even though a large proportion felt that the APHA should participate in legislative hearings, some of them listed qualifications that should be met before the Association was represented. A direct question attempted to concentrate their attention on the type of authorization they would require. Opinion on this question was split among the various types of authorization as can be seen in Table 4.

Many associations have debated as to whether or not they would lose some of their professional standing if they participated in legislative discussions. This question was posed in an attempt to record attitudes regarding this: "Some people have accused another association of losing its professionalness because it applied pressure in regard to some legislation. Do you agree?" Seventeen per cent said, "Yes"; 73 per cent, "No"; and 6 per cent said it depended on type of legislation or on other conditions or that they did not have enough information to reply. Eight per cent did not answer the question and 6 per cent did not know.

Many comments were added. For example, one person said, "No. In my opinion any professional society in this day which doesn't accept the responsibility for expressing the majority view of its members on issues after they

Table 4—Authorization That Respondents Would Require Before Their Association Represented Its Membership Before Congressional Hearings on Legislation

Authorization	Number	Per cent
		N = 200
Majority vote of the Executive Board, Governing Council, and Section Council	61	31
Majority vote of the Executive Board and Governing Council	42	21
Majority vote from a referendum of the entire membership	33	17
Majority vote of the Executive Board	30	15
Majority vote of the Governing Council	20	10
Other requirements	14	7
No answer	3	2
Total	203*	103†

* The 16 in the pretest were not asked this question

† More than 100, because three gave other requirements in addition to those provided in the question

have been freely debated and voted according to an agreed plan is not worth its salt." Another said, "No. As long as the Association tries to help legislate what is for the good of all. But if for selfish interests they only help one group or profession, they are bound to lose professionalism." A third stated, "I think it lost face and public esteem but it is still professional according to my concept of the word." One of those feeling that the other association did lose some of its professionalism inserted "ill-advised" legislation in the statement.

Section 9. State of Knowledge About the American Public Health Association

Most large organizations find it difficult to keep their members completely informed about their extensive organization. This would probably be somewhat true of the APHA which has such numerous activities. The questionnaire seemed to point out that there were a few areas where something might be done to extend knowledge of the APHA activities and their benefits to more of its membership. For example, one out of six respondents did not know the difference between a member and a Fellow. Many others gave incomplete information about the difference. Nearly two-thirds did not know how committee members were selected. One-fifth did not know the functions of a Section.

One core activity of the APHA has been listed as "supporting agencies like the U. S. Public Health Service and the Children's Bureau in such a way as to help protect them from budgetary cuts and other abuses in any way possible." [2] More than one-third said they did not know about this core activity.

One statement and question developed as an aid in determining whether or not persons would recognize a possible function as not being a present function, as well as to test how automatic checking responses had become, indicated that only one out of five knew immediately that the APHA does not provide "Scholarships and fellowships for foreign public health workers to learn methods for improving their countries' health work." It would be expected that some would answer the question even though they might not be sure that their Association did have such a program,

but four out of five not discriminating seems high.

During the last few years medical legislation has been stressed at health conferences and in the press. As would be expected, the leading public health organization, the APHA, has been involved in health legislation discussions. Yet, two-thirds of the APHA membership in this study did not know whether or not the Association actively supported or opposed any federal legislation this last year. In addition, one-eighth did not know that APHA offered testimony in support of or in opposition to specific federal legislation.

The APHA has made many contributions to public health research and has published results of the work of others. The importance of this activity increases with the distribution of its data. However, a majority of respondents did not recall any information on this subject received during the last 12 months. One might expect that recent dramatic developments, such as those on gamma globulin and fluoridation, would have reached many members, but the analysis indicates only 9 per cent noted recent work on gamma globulin and only 6 per cent on fluoridation.

The present efforts of the APHA are providing some members with information on its activities, but increased contributions to members and to the public would result if even greater emphasis were placed on improving and developing channels of communication.

Summary

This survey of the attitudes of New York State members toward the policies and activities of the APHA suggests many points of value for the future growth of the Association. It is apparent that the Association has many opportunities to improve its own public relations and health education within the membership. The replies to the questions in the survey indicate some of the areas where channels of communications can be improved and the organization strengthened by greater understanding and participation in the activities of the Association.

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Comparative Evaluation of Three Screening Methods for Detection of Hearing Loss in School Children

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Though screening for hearing loss is a widely adopted feature of the school health program, the methods to be employed are by no means a settled matter. A comparison study of screening technics reported here offers some answers—but not an unqualified answer—to this still unsettled problem.

✣ Since the introduction of the 4CA phonographic audiometer in 1926, the screening of school children for hearing loss has become an accepted and important facet of the total school health program. In more recent years, pure tone screening methods have been introduced in place of the spoken voice fading numbers test of the 4CA audiometer.[1-4] The latest available report on the extent of utilization of different methods of screening for hearing loss is for the school year 1947–1948.[5] At that time it was estimated that over one-half of the school population of the United States was covered by a screening program for hearing loss and that in about one-third of the programs pure tone screening was utilized alone.

An ideal case-finding program should select from a group of apparently well individuals the maximum number with a significant or potentially significant disability and the minimum number without such disability. The selection of school children with significant hearing loss from the total school population involves the use of a screening test, a diagnostic test, and a medical opinion. The screening test selects a portion of the school population for diagnostic testing. The diagnostic test selects a portion of the screening test failures for medical and educational appraisal. As a result of this appraisal, medical or educational recommendations, or both, are made for a portion of the diagnostic test failures. Both overselection and underselection may occur at any stage of this process of case finding. The screening test itself should be viewed as part of this total process and its results related to the results of diagnostic testing and educational and medical appraisal.

The cost of a screening test in terms of equipment, personnel, and time are additional factors which an agency choosing a given test must take into consideration. Of these factors, personnel and personnel time are the most expensive. Lay volunteers may be trained to administer and score the group voice fading numbers test, but they are not qualified to administer pure tone tests.

Most workers in the field of audiology have stated for some time that individual pure tone sweep check screening identifies more children with hearing loss for speech perception, as well as

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for tones above speech range, than group voice testing with fading numbers.[1-4] It also has been stated that the former method demands more time and is more expensive than the latter. Recently, Johnston has introduced two group screening technics known as the Massachusetts Hearing Test ("old" and "new") which were designed to reduce the time of pure tone screening.[6, 7] Johnston states that the newer group pure tone test has largely replaced the older one in Massachusetts at the present time.[8]

The study to be reported consists of a comparative evaluation of screening for hearing loss by three different technics—the individual sweep check, the "old" Massachusetts Hearing Test, and the group voice fading numbers test.

Material and Methods

For many years a well organized program of testing for hearing loss has operated in the public and nonpublic schools of Rochester, N. Y., under the joint sponsorship of the Board of Education and the Health Bureau. As is the case in many communities, school children from the third through seventh grades are tested every two years with the 4CA audiometer group fading numbers test. Children who fail the test are retested, and those failing the retest are given a pure tone threshold test and seen by a consultant otologist if it is necessary as indicated by the results.

Nine public schools with a third through seventh grade population of 2,818 were selected for study. This population formed a representative socioeconomic cross-section of the total third through seventh grade public school population. Of the population available for testing, 414 pupils were absent for all or part of the study period and were not included in the study group. The study group is composed of the remaining 2,404 pupils.

The screening procedures, diagnostic tests, and otologic appraisals were carried out within a period of two to three weeks for each of the nine school groups. They were performed in classrooms or other school rooms selected for low noise levels. A General Radio Company sound survey meter, Type 1555-A (with setting at the "A" position), utilized on several occasions, recorded ambient noise levels of 30–45 decibels in the testing areas.

The following screening procedures were utilized:

1. A group phonographic fading numbers test using a Western Electric 4CA audiometer with a set of 40 single 716-A magnetic receivers. This test was administered and scored by trained lay volunteers, essentially according to the method described in the Manual for a School Hearing Conservation Program.[2] A loss of nine or more S.U. in either ear was considered a failure. All children who failed this test were retested and rescored by the same method.

2. A group pure tone test, the "old" Massachusetts Hearing Test, using a Maico Model F-1 audiometer with a set of 40 Maico dynamic receivers. Double receivers, one live and one dummy, were utilized. They proved somewhat inconvenient with girls, since hair became entangled in them. This test was administered by an audiometric technician who had been given several weeks intensive individual training by one of the authors. The technic of administering and scoring the test was similar to that described by Johnston,[6] with the following exceptions: (1) the audiometer attenuator was set at 45 db for all frequencies; (2) signal tones were presented at 2,000, 500, 4,000, and 6,000 cps in that order with five "yes-no" options at each frequency; and (3) in scoring, children who marked more than two of the 20 "yes-no" options presented for either ear incorrectly were considered failures. Five master sheets, each with a different option pattern were used. All children who failed this test were retested and rescored by the same method.

3. An individual pure tone sweep check test using a Maico Model F-1 audiometer with double receivers. This test was administered by the same audiometric technician. At an intensity of 15 db, signal tones were presented twice at 1,000, 2,000, 4,000, 6,000, and 500 cps in that order. Children failing to hear any

Table 1—Results of Three Auditory Screening Procedures Applied to 2,404 Third Through Seventh Grade Children Rochester, N. Y., 1952–1953

	Number of Children	Screening Procedure		
		Group Phonograph	Group Pure Tone	Individual Sweep Check
Children Tested	2,404	2,404	2,404	2,404
Children with suspected hearing loss	465	167	211	262
Children whose suspected hearing loss was verified by threshold test	118	39	82	112
Children with medical or educational recommendations	74	31	53	71

one tone in either ear were considered as failures.

In each school, the administration of these three screening procedures was arranged in such a way that the audiometric technician was not aware of the identity of children who failed either of the two group screening tests until all children had been sweep check tested. All children who failed either of the group screening tests twice, or the sweep check once, were given a pure-tone threshold test by one of the authors using a Western Electric Model 6 BP audiometer with a single earphone. The technic described in the Manual for a School Hearing Conservation Program was followed.[2] Frequencies of 1,024, 2,048, 4,096, 6,144, 512, and 256 cps were presented in that order. Any child who had a loss in the poorer ear of more than 15 db at two frequencies, or more than 20 db at one frequency, was considered a failure. Such failures will be referred to hereafter as "verified failures" or children with "verified hearing loss."

All children with verified hearing loss were seen by an otologist.* The routine examination included inspection of nasal passages, pharynx, and tympanic membrane. Nasopharyngoscopy was not performed. Medical recommendations varying from requests for repeat observation to treatment for chronic otitis media were made by the otologist.

Educational recommendations, varying from preferred seating arrangements to speech reading instructions, were the joint decision of otologist and audiologist. They were made on the basis of the configuration of individual audiograms and the anticipation of possible future difficulty with hearing. In inspecting audiograms, particular attention was paid to losses at 512, 1,024, and 2,048 cps. Anticipation of future difficulty with hearing was based on the appraisal of past medical history.

Results

A total of 2,404 children received all three screening tests: group phonograph, group pure tone, and individual sweep check. As a result of this screening combination, 118 children (4.9 per cent) were determined to have a verified hearing loss. No one of the three screening procedures was able to select all 118 children; 39 children (33 per cent) were selected by the group phonograph screening procedure, 82 (69 per cent) by the group pure tone screening procedure, and 112 (95 per cent) by the individual sweep check screening

* Dr. Lawrence J. Nacey or Dr. Robert J. McMahon.

Table 2—Deficiencies of Three Auditory Screening Procedures Applied to 2,404 Third Through Seventh Grade Children Rochester, N. Y., 1952–1953

	Screening Procedure		
	Group Phonograph	Group Pure Tone	Individual Sweep Check
Result of Screening Procedure			
Children tested	2,404	2,404	2,404
Children with suspected hearing loss	167	211	262
Deficiency of Screening Procedure			
Children with verified hearing loss missed by screening procedure	79	36	6
Children with no verified hearing loss, selected by screening procedure (overselection)	128	129	150
Children with verified hearing loss with no medical or educational recommendations	8	29	41

procedure. As a case finder, the individual sweep check test was the best of the three screening tests (Table 1).

Of the 118 children with verified hearing loss, medical or educational recommendations were made in the case of 74 (64 per cent). In the case of the remaining 44 children (36 per cent), the verified hearing loss was of such a nature as not to require medical or educational attention at the time of examination. No one of the three screening procedures was able to select all 74 children: 31 (42 per cent) were selected by the group phonograph screening procedure, 53 (72 per cent) by the group pure tone screening procedure, and 71 (96 per cent) by the individual sweep check screening procedure.

Although the individual sweep check was the best case finder of the three screening procedures, it selected more children with no hearing loss than either of the two group tests. However, the absolute number of children overselected by the sweep check, and thus needlessly given a pure tone threshold test, was not significantly in excess of the number of children overselected by either of the group tests (Table 2).

The same pattern of overselection is apparent in the medical and educational appraisals. Although the individual sweep check test was the best finder of significant cases, it selected the greatest number (41 children) with verified hearing loss of no apparent significance (Table 2). This overselection with its inherent overuse of personnel time must be balanced against superiority in selecting significant cases. Although there were 74 children with a verified hearing loss significant enough to require medical or educational recommendations, or both, 43 of these children (58 per cent) would not have received these recommendations if the group phonograph test had been the only screening procedure used. Similarly, if the group pure tone test had been the only screening procedure used, 21 of 74 children (28 per cent) would not have had medical or educational recommendations. However, if the individual sweep check had been the sole screening procedure used, only three children (4 per cent) would not have received medical or educational recommendations.

The screening procedures were timed

in the case of 1,721 children, about two-thirds of the total group. Actual time involved in setting up equipment, instructing the children, administering and correcting the test was measured. The time required to retest children who failed the specified group test was included in the calculation of total time, since the retest appears to be an essential step in the screening procedure. Of the three screening procedures, the group pure tone was the least time-consuming. The average time required for the various screening procedures was as follows: group phonograph—1.4 minutes per child; group pure tone —0.9 minutes per child; and individual sweep check—1.9 minutes per child.

Discussion

Interpretation of the significance of these results hinges on many factors: the standards of the audiometric testing procedures themselves, the criteria by which failures were judged, the accuracy with which the tests were performed, and the validity of the audiologic and otologic recommendations that were made.

Standards of audiometric testing and criteria for the selection of failures are not uniform. Watson and Tolan discuss some of these variations for the group phonograph test and point out the different combinations of frequencies used in pure tone testing.[4] The same authors recommend that sweep check screening be done at a constant 10 db level; whereas, the Committee on Conservation of Hearing of the American Academy of Ophthalmology and Otolaryngology recommends a level of 15 db.[2] The same committee recommends that failure to hear two or more frequencies in either ear on the sweep check be used as the criterion for referral for threshold testing; whereas, the programs in Maryland[9] and in Tennessee[10] utilize failure to hear one or more frequencies as the criterion.

As practiced in Massachusetts,[11] Michigan,[12] and Texas[13] the frequencies and number of "yes-no" options utilized for the "old" Massachusetts group pure tone test differed in each area. Modifications in the calibration of earphones and scoring of this test were made by DiCarlo and Gardner.[14]

Prior to setting up the present study, letters were written to several otologists and audiologists in an attempt to standardize both the testing frequencies and the failure criteria in some acceptable fashion. The advice received was conflicting.

Opinions concerning the clinical significance, potential reversibility, and methods of treating different types of hearing loss are also conflicting.[15, 16] In 1940 and 1942, Crowe, et al., reported a high percentage of children with high tone loss which cleared after irradiation of the hypertrophied lymphoid tissue.[17] However, adequate controls were not available at the time and the inferences of these early results have been questioned by Guild in a long-term follow-up study of the same children.[18] The significance of hypertrophied lymphoid tissue in the etiology of hearing loss in children is a controversial subject. It is reported as being present and requiring treatment in three-quarters of the children seen in one clinic[9] and one-fifth of those seen in a similar clinic.[19]

Although the diagnosis and significance of severe or moderate loss of hearing seems well standardized, the same cannot be said about minor degrees of hearing loss. This problem calls for longitudinal studies over a long period of time, correlating audiological, medical, and educational observations, before definitive statements can be made.

Because of these variations in technics, standards, and their interpretation,

values which measure or compare screening procedures are not easily fixed. Therefore, it may prove difficult to generalize the results of this study to the experience of others.

In third through seventh grade children, and practiced as described, pure tone technics were significantly better screening devices than the group fading numbers test. This was true both in terms of children with verified hearing loss and in terms of children who were recommended for special educational or medical consideration. Of the two pure tone tests, the individual sweep check was the better screening device but required considerably more time to perform.

The data concerning overselection lend weight to the frequently repeated admonition that the services of a qualified audiologist and otologist should be an integral part of the school conservation of hearing program. Only after adequate diagnostic procedures have been carried out, is it possible to make intelligent recommendations to school administrators or families.

When such procedures are included in a program, the choice of screening test becomes a joint professional and administrative decision particularized for that program. Furthermore new technics can be tried to see if they are adaptable and practical and the choice of screening test modified accordingly. The findings of studies such as that reported here may be of value in deciding the screening procedure to use under these circumstances.

Summary

1. Two thousand four hundred and four third through seventh grade pupils were screened for hearing loss by a group fading numbers test, a group pure tone test ("old" Massachusetts Hearing Test), and an individual sweep check test. The screening tests used are described in some detail.

2. Pupils failing either group test twice or the individual test once were given a pure tone threshold test. Pupils whose loss was verified by threshold testing were examined by an otologist.

3. One hundred and eighteen children were determined to have a verified hearing loss and medical or educational recommendations, or both were made for 74 of this group.

4. Pure tone technics were significantly better screening devices than the group fading numbers test. Of the two pure tone technics, the sweep check was the better case finder, but it required more than twice as much time to perform.

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Home Safety and Accident Prevention in a Child Health Conference

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If home accident prevention is to become a functional part of community health administration, then we need to know as much as can be learned about the problem before we undertake the job, lest we "go riding off in all directions." Some useful light is shed here on this still dim-lit region of human behavior.

✣ A serious accident occurs in one out of every five households every year, and nearly every household suffers from a minor accident. In 1952 there were 28,700 persons killed and 4,300,000 injured in home accidents.[1] Of those killed, 6,300 were children under five years of age. Accidents rank first as a cause of death from one to 24 years of age, and seventh in the under one-year group.

The preschool child is particularly vulnerable and susceptible to accidents and since the preschool child spends a great deal of his time in and about the home, home accidents are of frequent occurrence in this age group. In 1952 in New York City, and for years previously, more children in age group one to five died from fatal accidents than from diphtheria, whooping cough, measles, German measles, poliomyelitis, rheumatic fever, meningitis, and tuberculosis combined. In addition to deaths from accidents, it is estimated that there are about 150 times as many nonfatal, but perhaps serious crippling conditions resulting from such accidents.[2]

With the improving control of communicable diseases, the accident problem becomes of increasing importance and much effort needs to be directed toward its early solution. Until very recently but little attention was given to the accident problem, although it has assumed ever-increasing proportions as a leading cause of mortality and morbidity in young children. The Bureau of Child Health, which is responsible for the total health supervision of well infants and young children under six in New York City, became vitally concerned with the solution of this problem and inaugurated late in 1951 a three-fold program of staff education, parent education, and epidemiological investigation. The latter study was designed to obtain accurate data on the epidemiology of nonfatal and fatal accidents in the preschool population. Our current knowledge of accidents is chiefly based on fatal accidents and little, if anything, is actually known about the morbidity of the extensive nonfatal group.

Staff Education

It is generally conceded that the field staff must be properly indoctrinated, well trained, and alerted to the accident problem if the program is to operate

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effectively. After several preliminary conferences pertaining to the proposed program with the supervisory staff, both medical and nursing, a directive was issued to all staff physicians, health officers, and others concerned. The objectives of the program were fully outlined.

Since the physician is a key person in the accident prevention program, and since many were not sufficiently aware of the importance of the problem, it became necessary to give them a better orientation relating to accident prevention. Various methods were employed to obtain this objective.

1. Preservice Training—Child health station physicians are practicing physicians employed on a part-time basis and selected on the basis of qualifications, previous training, interest, and experience. Prior to appointment, however, they are given a comprehensive and intensive six-week course by a select faculty on all phases of child health. Several hours are now devoted to home safety and accident prevention and to a discussion of the various types of accidents most likely to occur at a given stage of growth and development and their possible prevention. The physicians also are alerted to the need for anticipatory counseling of parents in order to minimize possible hazards to infants and children in and about the home. Nurses get similar indoctrination in their respective preservice seminars.

2. Inservice Training—Abstracts of current literature and technical instructions relating to safety and accident hazards and their possible prevention are issued periodically throughout the year to the entire medical and nursing staffs.

3. Manual of Procedures—A chapter on accidents is now a basic part of the Manual of Procedures for the personnel in child health stations.

4. Accident Report Form—The careful reporting of accidents and the interrogation of parents serve as a valuable teaching device for the health team and for the parents, too. It focuses their attention on the problem and importance of home safety and the prevention of needless accidental occurrences. Nearly all physicians have remarked that the knowledge, skills, and experience gained in the accident program have been rewarding to them and are being employed continuously in their private practices.

Parent Education

It is recognized that the primary responsibility for home safety rests upon the parents. They have the closest contact with the potential victim and the home in which he lives. Parent education is, therefore, an essential aspect of the program and is being carried out in the following ways:

1. A chapter on accidents was added to the revised Baby Book, issued for distribution to parents by the Department of Health.

2. Reliable and informative pamphlets and leaflets relating to the accident problem are distributed to parents in the child health stations.

3. Posters and flip charts on accidents and their prevention have been distributed in cooperation with the Bureau of Public Health Education and are prominently displayed in all child health stations throughout the city.

4. Parent-physician and parent-nurse conferences are held as a routine part of the child health conference. These are utilized to counsel and provide anticipatory guidance to parents on accident prevention.

5. A safety check list devised by the American Academy of Pediatrics is issued to every parent whose child is under supervision in the child health station. The parent is requested to examine her home and make appropriate checks on the list. On the succeeding visit the physician and the nurse discuss the check list with the parent and recommendations are made relating to needed corrections.

6. The public health nurse is requested to observe during her routine home calls any hazardous conditions in and around the home and to advise the parent on the necessary safety measures.

Epidemiological Investigation

Further knowledge is needed regarding the epidemiology of accidents. This study is designed to obtain such data and to evaluate and scrutinize critically the information thus obtained. Data on the first 981 children who suffered from 1,000 nonfatal accidents are presented in Table 1. There were 567 accidents among the males and 433 among the females—the sex difference is statistically significant. It was highest at 12–17 months in the male, and at 24–35

Table 1—Age at Time of Accident by Sex and Color

Age in Months *	Total	Male				Female			
		Total	White	Puerto Rican †	Other ‡	Total	White	Puerto Rican †	Other ‡
Under 6	57	32	12	7	13	25	9	3	13
6–11	155	74	44	7	23	81	50	10	21
12–17	192	118	86	8	24	74	46	5	23
18–23	152	95	58	12	25	57	38	7	12
24–35	190	106	80	5	21	84	56	4	24
36–47	134	84	68	2	14	50	38	2	10
48–59	73	33	26	2	5	40	33	..	7
60 and over	28	14	12	..	2	14	13	..	1
Unknown	19	11	8	..	3	8	4	1	3
Total	1,000	567	394	43	130	433	287	32	114

* Six-month intervals for the first two years of life; year intervals for two through four years
† Not a color, but kept as a group for this study
‡ Includes unknown

months in the female. The rise in the over six-month group reflects the tendency of less parental protection and more mobility and exploration on the part of the child.

Since no accurate statistics are available for the color composition of the child health station population, no definite conclusions can be drawn as to differences by color. It may be said, however, that the number of children in the nonwhite group is higher than the percentage composition of nonwhite in the general population.

Serious accidents likewise show a sex difference (Table 2), 292 among males and 199 among females. (A serious accident is defined as one receiving some medical care either by a private physician, outpatient department, hospital inpatient service, etc.) It is highest for both sexes in the 24–35 months group. The small number in the 60 months and over group may be more apparent than real because of the smaller number of children under supervision at this age group.

Of the 491 serious accidents, 112 were in the nonwhite group, a higher number than the general percentage composition of the population. No definite conclusions, however, can be

Table 2—Age at Time of Serious * Accident by Sex and Color

Age in Months †	Total	Male				Female			
		Total	White	Puerto Rican ‡	Other **	Total	White	Puerto Rican ‡	Other **
Under 6	26	13	7	3	3	13	5	1	7
6–11	64	26	20	1	5	38	23	4	11
12–17	90	60	39	7	14	30	19	3	8
18–23	65	41	24	6	11	24	15	3	6
24–35	98	62	48	2	12	36	21	2	13
36–47	69	49	41	1	7	20	18	..	2
48–59	40	24	17	2	5	25	21	..	4
60 and over	20	11	9	..	2	9	8	..	1
Unknown	10	6	6	..	..	4	2	1	1
Total	491	292	211	22	59	199	132	14	53

* Defined as receiving some medical care (private physician, outpatient department, inpatient department)
† Six-month intervals for the first two years of life; year intervals for two through four years
‡ Not a color, but kept as a group for this study
** Includes unknown

Table 3—Month of Serious * Accident and Place for All Ages from April, 1952, to March, 1953

Month	Total	Place							
		Indoor				Outdoor			
		Total Indoor	Own Home	Home Building	Other	Total Outdoor	Playground	Other	Unknown
Jan.	23	23	20	..	3	..	..	..	..
Feb.	18	18	17	..	1	..	..	..	..
Mar.	4	4	3	..	1	..	..	..	..
Apr.	35	26	24	1	1	7	2	3	2
May	33	22	18	3	1	10	2	8	1
June	43	25	22	2	1	17	4	13	1
July	46	33	21	4	8	13	5	8	..
Aug.	40	25	14	6	5	15	9	6	..
Sept.	35	26	23	1	2	9	3	6	..
Oct.	33	24	20	3	1	9	4	5	..
Nov.	21	18	15	..	3	3	2	1	..
Dec.	21	20	14	3	3	1	..	1	..
Total	352	264	211	23	30	84	31	53	4
Per cent of Total	100.0	75.0	60.0	6.5	8.5	23.9	8.8	15.1	1.1

* Defined as receiving some medical care (private physician, outpatient department, inpatient department)

drawn here as to color incidence for the same reasons as indicated in reference to Table 1.

Season—There appears to be a higher incidence of serious accidents in the summer and spring (Table 3). It was highest in July and lowest in March. The very low incidence in March is unquestionably due to poor reporting and possibly because an additional staff of newly appointed physicians was assigned to the child health stations, but there is a definite seasonal variation indicating a lower incidence in the fall and winter months.

By Place of Occurrence—Of all serious accidents, 75 per cent occurred indoors and 23.9 per cent outdoors. Of the indoor accidents, 60 per cent occurred in the victim's own home, another 6.5 per cent in the home building, and 8.5 per cent occurred in other than the home or home building. Of the 23.9 per cent of serious accidents

Table 4—Age at Time of Accident by Place of Occurrence

Age in Years	Total	Place					
		Indoor			Outdoor		
		Per cent Own Home	Per cent Home Building	Per cent Other	Per cent Playground	Per cent Other	Per cent Unknown
Under 1	212	79.3	2.8	11.8	1.9	4.2	..
1	344	74.1	4.1	10.2	3.8	6.1	1.7
2	190	61.6	5.8	11.1	6.8	14.2	0.5
3	134	47.8	9.0	13.4	6.7	21.6	1.5
4	73	39.7	2.7	17.8	5.5	34.3	..
5 and over	28	28.6	7.1	7.1	14.3	35.8	7.1
Unknown	19	68.4	..	15.8	..	10.5	5.3
Total	1,000	65.4	4.7	11.7	4.7	12.3	1.2

which occurred outdoors, 8.8 per cent happened in playgrounds and 15.1 per cent in all other localities (Table 3).

Of all accidents reported, both serious and minor (Table 4), 65.4 per cent occurred in the victim's home and an additional 4.7 per cent within the home building. Of the accidents which occurred outdoors—18.2 per cent of the total—4.7 per cent occurred in the playground and nearly all were of the serious type. Several factors may be contributory. It may be due to the hazards of play, to less parental supervision, or to the mother being unaware of the minor accidents which may occur in the playground and a neglect to report minor mishaps.

The home was responsible for 79.3 per cent of the accidents to children under one year, 74.1 per cent in the one-year-old group, 61.6 per cent to two-year-olds, 47.8 per cent to three-year-olds, 39.7 per cent to four-year-olds, and 28.6 per cent to the five years and over age group of all reported accidents. Conversely, the outdoor type of accident increases with age from 6.2 per cent in the under one-year group to 57.2 per cent of all accidents in the five years and over age group.

Both serious and nonserious accidents follow the same pattern. The indoor type of accident is higher in the younger age group and the outdoor variety increases with age, since more time is now spent outdoors.

Etiology of Accident by Age Group

In Table 5 the type of accident by age group is shown. Falls accounted for 45.2 per cent of all injuries. Burns came next in frequency, accounting for 21.3 per cent, and all other types, 32.8 per cent of all mishaps. The frequency of burns is highest in the under one-year-age group and the incidence decreases with age, ranging from 26.9 per cent in the under one-year group to 7.1 per cent in the five years and over age group. This is perhaps explained by the fact that the older child learns by experience and becomes more cautious. Also, he is less subject to mishandling, such as a parent drinking hot coffee or smoking while holding the baby. It is possible that minor injuries are not as frequently reported in the older age groups.

Falls follow the same pattern as burns, higher in the younger age and decreasing with age until age five when there is a sharp increase in the incidence of falls. This may be due to greater mobility and more daring activity in the play pattern of this age group or to the number of unreported minor

Table 5—Etiology of Accident by Age Groups

Age in Years	Total	Etiology							
		Burns		Falls		Other		Unknown	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Under 1	212	57	26.9	111	52.3	44	20.8	..	..
1	344	89	25.9	164	47.6	90	26.2	1	0.3
2	190	30	15.8	82	43.1	76	40.0	2	1.1
3	134	20	14.9	53	39.6	59	44.0	2	1.5
4	73	9	12.3	20	27.4	43	58.9	1	1.4
5 and over	28	2	7.1	16	57.2	10	35.7	..	..
Unknown	19	6	31.6	6	31.6	6	31.6	1	5.2
Total	1,000	213		452		328		7	
Per cent of Total	100.0		21.3		45.2		32.8		0.7

Table 6—Diagnosis of Injury by Treatment Agency

Diagnosis	Total No. of Injuries	Treatment Agency *					
		No. PP †	P.P.†	OPD †	IPD †	Other ‡	Unknown
Burn	213	101	32	52	18	6	8
Fracture	73	2	16	31	24	..	2
Dislocation	3	1	2	..	1	..	..
Sprain	6	1	2	1	..	1	1
Concussion	30	5	7	5	12	2	1
Contusion, laceration, etc.	641	316	93	167	19	40	16
Poison	11	1	1	2	7	..	..
Animal bite	7	1	2	1	2	..	2
Human bite	1	..	..	..	..	..	1
Swallowed object	1	..	..	..	1	..	..
Other	8	1	3	2	3	..	..
Unknown	6	3	1	..	1	1	..
Total	1,000	432	159	261	88	50	31

* Duplicate count
† PP = private physician; OPD = outpatient department; IPD = inpatient department
‡ Denotes: nurse, druggist, playground supervisor, etc.

events or both. The "other" category of accidents increases proportionately with age as burns and falls decrease.

Diagnosis of Injury by Treatment Agency

Table 6 shows diagnosis of injury by treatment agency. Of the 1,000 injuries reported, 432 were not treated by a designated treatment agency but received first aid in the home. One hundred and fifty-nine injuries were treated by private physicians; 261 were treated in outpatient facilities; 88 were treated in the inpatient departments of hospitals; 50 were cared for by a nurse, playground supervisor, druggist, etc. In 31 injuries the type of treatment agency was undetermined.

Serious Accidents

Of all reported accidents, 49.1 per cent were classified as serious. The serious accident rate also shows a significant difference with regard to age (Table 7). The rate for infants under one year is 2.7 per 1,000 as compared with a corresponding rate of 5.4 in the one-to-five-year-age group. The denominators used in Table 7 to obtain the respective rates are:

Under One—33,015 represents the total number of infants registered in child health stations.

Over One—74,380 represents the total number of preschool children registered in child health stations.

The higher incidence of serious accidents with increasing age may be explained in the same manner as indicated previously for all accidents, such as less direct supervision, more exploration, daring enterprise, greater play activity, and hence exposure to more frequent contact with unsafe situations and objects. It is possible that there is also less reporting of minor accidents in the older age group, since the time interval between visits to a child health station on behalf of the preschool child is considerably longer than that for the infant and, hence, the mother may not recall minor episodes which occurred several months previously.

Supervision—In the reported "Serious Accidents by Type of Supervision" (Table 8) the mother was said to be in direct supervision of the child at time of occurrence in only 50.5 per cent of

Table 7—Age at Time of Accident (of Serious Accident *)

Age (in Months)	Total No. of Accidents	No. of Serious Accidents	Per cent Serious of Total Accidents
Under 12	212	90	42.5
12–23	344	155	45.1
24–35	190	98	51.6
36–47	134	69	51.5
48–59	73	49	67.1
60 and over	28	20	71.4
Unknown	19	10	52.6
Total	1,000	491	49.1

Serious Accidents Rates

Under 1 $\frac{90}{33{,}015} = 2.7$ per 1,000

Over 1 $\frac{401}{74{,}380} = 5.4$ per 1,000

* Defined as receiving some medical care (private physician, outpatient department, inpatient department)

the cases. It is reasonable to assume that ordinarily infants and young children are under direct supervision of the mother to a greater extent than this figure would indicate. It is postulated that young children are exposed to a greater risk when supervised by other than "own" parent. Since the number of the unknown category is so large, no definite conclusions can be drawn at this time from the findings by type of supervision. These studies will be continued with a search for a more revealing answer.

Table 8—Number of Accidents by Type of Supervision

Supervision	No.	Per cent
Mother	505	50.5
Grandparents	17	1.7
Other relatives	38	3.8
Nursery	5	0.5
Baby sitter	1	0.1
Other	20	2.0
Unknown	414	41.4
Total	1,000	100.0

Congenital Malformations and Behavior Disorders—Because of the large number of "unknown" category, and since the incidence of congenital malformations and the various behavior disorders listed in the nonaccident group is not known, definite conclusions cannot be drawn from these data. It is not possible to conclude from them whether congenital malformations and behavior disorders are influencing factors in the causation of accidents (Table 9).

Place and Time of Day—There appears to be a definite correlation between the occurrence of a serious accident and the time of day (Table 10). About 44 per cent of all reported serious accidents occurred between the hours of 12 noon and 5 p.m. Next in frequency was 6 a.m. to 11 a.m., accounting for an additional 26.4 per cent. Of all serious accidents, 78.8 per cent occurred indoors and the remainder outdoors. Of those which occurred out-

Table 9—Number of Accidents Proportion of Children with Congenital Malformations and Behavior Disorders

Congenital Malformations and Behavior Disorders	Total	Yes	No	Unknown	Per cent Yes of Total Known
Congenital malformations	1,000	8	543	449	1.5
Tics, spasms and twitches, or both	1,000	1	523	476	0.2
Abnormal sleeping habits	1,000	7	519	474	1.3
Abnormal eating habits	1,000	11	510	479	2.1
Thumb sucking *	250	13	117	120	10.0
Bed wetting *	250	13	109	128	10.7
Nail biting	1,000	20	329	651	5.7
Other	1,000	16	174	810	8.4

* Applies only to children of three years of age and over and those among the unknown age where the child was obviously over three years of age

doors, the playground was responsible for 33 out of 98 mishaps, or 33.5 per cent.

Type and Part of Body Involved—There were 412 "falls" (excluding those falls with part of the body involved unknown) and of these 82 per cent included a head involvement. Percentage of head involvement decreased with age ranging from 86 per cent in the under one-year to 62 per cent in the four years and over group.

Two hundred and five injuries were due to burns (exclusive of burns with part of the body involved undetermined). And of these 205 burns, 61 per cent had an upper extremity involvement. There was no perceptible difference in this pattern with age (Table 11).

Accident Repeaters—It has been stated that the majority of accidents occur in a relatively small proportion of the population. Many investigators [3-5] also have found that the accident-prone child presents a characteristic pattern. Dr. Langford and associates [6] in a study on accident proneness were able to classify the children into three groups: the overactive and restless child who tends to be impulsive and gets into situations where accidents are almost inevitable under stress; the immature child who lacks parental supervision and who desires independence and competes with older children in an unsafe

Table 10—Time of Day of Serious * Accident and Place for All Ages

Time of Day	Total	Place							
		Indoor				Outdoor			
		Total Indoor	Own Home	Home Building	Other	Total Outdoor	Playground	Other	Unknown
6 a.m.–11 a.m.	130	106	84	7	15	23	11	12	1
12 noon–5 p.m.	216	165	134	14	17	50	19	31	1
6 p.m.–5 a.m.	82	68	59	3	6	14	1	13	..
Unknown	63	48	41	2	5	11	2	9	4
Total	491	387	318	26	43	98	33	65	6

* Defined as receiving some medical care (private physician, outpatient department, inpatient department)

Table 11—Accidents by Type and Part of Body Involved

Age in Years	Falls			
	Total *	Head Involvement	Other than Head Involvement	Per cent with Head Involvement
Under 1	88	76	12	86
1	157	141	16	90
2	82	65	17	79
3	51	36	15	71
4 and over	34	21	13	62
Total	412	339	73	82

Age in Years	Burns			
	Total †	Upper Extremity Involvement	Other than Upper Extremity Involvement	Per cent Upper Extremity Involvement
Under 1	57	34	23	60
1	88	55	33	63
2	30	19	11	63
3	19	10	9	53
4 and over	11	8	3	73
Total	205	126	79	61

* Excluding falls with part of body involved unknown. Majority of falls have head involvement. Percentage with head involvements decreases with older children

† Excluding burns with part of body involved unknown. Majority of burns have upper extremity involvement. No change in pattern due to age

environment; and the child who manifests resentment and hostility, who looks upon the home as undesirable, and who may seek to obtain more attention by becoming injured.

In our study out of 981 children with 1,000 mishaps, only 19 had more than one occurrence and none was said to have suffered more than two accidents in his lifetime. Of the 38 injuries to repeaters, 21 were of a serious nature. The small number of repeaters is contrary to previous findings. It may be pointed out, however, that the discrepancy may be due to the small number involved in this study, the duration of the study, the interval between visits, and the possibility that the mother did not report minor events. It is also possible that the pattern does not manifest itself in the preschool child. The subject of accident proneness is an intriguing one and needs further investigation and research.

Comment and Discussion

Accident prevention presents a major child health problem today. Health departments, indeed, all health and welfare agencies and the entire community, have a responsibility and an obligation in the reduction of preventable accidents. Accidents are amenable to control if based upon sound epidemiological principles.[7] Like many diseases, they have multiple causations and many components and, hence, are complex in nature and difficult of solution.

Every accident must be thoroughly

investigated and the many interrelated factors understood. In any accidental occurrence the agent, host, and the entire environment must be studied. Time, place, season, mechanism of occurrence, physical, cultural, emotional, and sociological elements must also be taken into account. In the occurrence of some accidents it is possible that the agent is of far lesser importance than the host, the environment, and their impact and interrelationship.

It is exceedingly important to understand why accidents occur with greater frequency to some children than to others. Why are some children more vulnerable than others? What is the effect and interrelationship of the quality of parent-child relationship? What are the effects of stresses and strains? While a solution of the problem presents formidable obstacles, these can be obviated by means of a combined community effort. The medical, nursing, educational, and legal professions, industry and engineering, health and welfare agencies, the clergy and, indeed, the community leaders must work together, each contributing his skill and knowledge as a team to the successful solution of the problem.

Educational Needs

Effective accident control can be achieved through education. In the teaching of home safety and accident prevention continued education is needed. Since children are members of the family group, parents must be provided with reliable information without any overdramatization and advised in simple terms on the need for the development of safe habits and attitudes by their children. Parents must be made to realize their obligations in that children often imitate their parents. Parental guidance and counseling must be highly individualized and attuned to the abilities, potentialities, and limitations of the parents. Parents must also be provided with an opportunity to participate in the home safety and accident prevention program, such as by the use of a safety check list. Parents must be alerted also to the need for discipline. Although children learn by experience and exploration, it is dangerous to permit a child to explore hazardous situations unsupervised and unguided.

The health team in a child health conference is well qualified to carry out the educational program because of background, training, and experience in preventive medicine and in immunizing children against the various communicable diseases. Immunization of parents with the "vaccine of education" is not strange to health workers, but rather a very familiar everyday experience. The physician in a child health station also is familiar with the growth and development of the child and his background. It is necessary for the physician, however, to know about the child's home environment and other relevant factors concerning the home.

The public health nurse, as a very important member of the team, also plays a dominant role in the home safety program of the child health conference, not only during the parent-nurse conference in interpreting physician's recommendations and providing additional health education, but as an experienced observer during routine home follow-up visits. The public health nurse notices potential hazards and unsafe conditions in and about the home and advises parents on the corrective measures indicated.

Research

1. Further large-scale investigations are needed relating to nonfatal accidents, including both major and minor.
2. More knowledge based on sound epidemiological data must be accumulated.
3. All influencing and determining factors must be studied and understood.

4. Not only the physical components must be known, but the cultural, social, psychological, and the psychodynamics of accident occurrence need to be investigated.

5. Sound control measures and effective preventive programs must be assessed and evaluated.

Summary and Conclusions

1. Accidents, fatal and nonfatal, are principal hazards to the preschool child.

2. Home safety and accident prevention are thus major child health problems today.

3. Accident prevention must be made an integral part of the child health conference, and permeate all everyday activities and routine health department services.

4. The New York City Bureau of Child Health three-fold program is described.

5. Data are presented on 981 children with 1,000 mishaps.

6. Accidents follow the same pattern as a communicable disease and are amenable to control measures.

7. The accident problem is multifacetted and requires the combined efforts of many skills and disciplines, all working together toward its solution.

8. Sound preventive programs will become possible when more knowledge is obtained through comprehensive epidemiological studies.

9. Home safety is everybody's business, a collaborative effort, an all-year-round job. Homes must be made not only happier, but safer places for infants and young children.

ACKNOWLEDGMENT—Grateful appreciation is expressed to all physicians and public health nurses in child health stations who actively participated in this study.

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Prentiss Award to Dr. Turner

Clair Elsmere Turner, D.Sc., Dr.P.H., received the 1953 and 10th annual Elisabeth S. Prentiss National Award in Health Education of the Cleveland Museum of Health at the 13th annual meeting of its National Advisory Council in New York City in November. The presentation was made by William P. Shepard, M.D., vice-president of the Metropolitan Life Insurance Company, New York.

Dr. Turner is assistant to the president of the National Foundation for Infantile Paralysis and professor of public health emeritus, Massachusetts Institute of Technology. In 1953 he became the first president of the International Union for Health Education of the Public and is a consultant in health education of the World Health Organization.

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1953 in Retrospect

The eighty-first year of the Association was one of steady and progressive achievement. At the Annual Meeting in November, 165 new Fellows were elected and during the year, 1,149 new members, bringing the total membership of the organization up to 13,019. The organization is now served by a force of 60 staff members.

The two meetings of the Governing Council this year were highlighted by policy decisions of long-range significance. A comprehensive effort was made to acquaint members of the Council with current problems growing out of studies made during the last several years of trends and policies, with special reference to questions about Affiliated Societies and Branches and to problems of fellowship, membership, and dues. An entire day was spent by the Council on a review of these matters. A full summary of Council actions will be carried shortly in the Journal, but in the meantime it is gratifying to report that the lively interest of those concerned in the affairs of Affiliated Societies and Branches stimulated a wholesome study of the problems which augurs well for final decisions that will promote the health of this professional society. It is possible to say with assurance that sentiment strongly supports the continuation of Affiliated Societies in the several states and of Regional Branches. The relationships, however, between these groups and the parent Association will have to be more fully spelled out by an expanded Reference Committee on Affiliated Societies and Branches authorized by the Council. Members of the Governing Council expressed gratification that important policy matters were studied with care and were acted upon by this deliberative body.

The most significant and outstanding service rendered by our Association to the cause of public health is undoubtedly the work of the various subcommittees of the major Committees on Research and Standards, Administrative Practice, and Professional Education. During the past year we can count among the most important contributions the tenth edition of the Standard Methods for the Examination of Dairy Products, a tuberculosis guide, and the report on Housing an Aging Population. It is gratifying to note that the proposed housing code issued last year has aroused great interest, with a call for over 4,000 copies.

Work is going forward on the guidelines for local and state health department practice and—particularly—on the eighth edition of the classic report on the Control of Communicable Diseases in Man which has achieved wide international use. The new edition will appear with the endorsements of several governments and perhaps also that of the World Health Organization.

Notable advance has been made in the development of field training areas for health administrators and in the use of the Professional Examination Service, now widely utilized by many civil service groups.

A second major activity of the Association is the publication of this Journal, which for most of the year serves as a common meeting ground for our widely diversified membership. How far this effort has been successful our readers can judge better than we; but we hope that the slightly modernized format of this issue will meet with approval. The Year Book will be discontinued but the material which it has hitherto contained will be found in the columns of the Journal itself.

The third major activity of the Association is its Annual Meeting. Five thousand and one hundred of us gathered in New York City, with the affiliated meetings of 24 different public health organizations. Public health workers from Argentina, Bermuda, Brazil, Chile, Cuba, Egypt, Formosa, Great Britain, Haiti, India, Iran, Japan, Mexico, Philippines, Thailand, and Venezuela were present among others, and with distinguished representation from the World Health Organization. Many of the outstanding contributions will be presented in our columns in the coming months. They included striking and significant advances in our knowledge of the possibilities of immunization against influenza and poliomyelitis; and particularly noteworthy were the opening and closing discussions dealing with the spirit and technics of processes designed to elicit effective community participation in the public health program.

The presentation of the Lasker Awards was, as usual, one of the high points of the meeting. The list of these awards and their citations appear in this issue of the Journal. Our December issue carried the announcement of the award of the Sedgwick Medal to Professor Carl E. Buck of the University of Michigan. Dr. Buck had been ill for over a year, but was able to attend the meeting. A few days after his return to Ann Arbor, however, we received news of his death. It is a deep source of gratification that the Association was able to recognize his great services to our cause. His work for the Committee on Administrative Practice of the Association, and in many other connections, has brought the knowledge of sound administrative health practice to many hundreds of communities in the United States and Canada, and few recipients of the Sedgwick Medal have more fully deserved this unique tribute which our Association has to offer. His was the type of community service for which the American Public Health Association stands and which it has made effective throughout the years.

Medical Care in Richmond

✢ We strongly recommend to our readers a careful study of a recent description of the Richmond, Va., Medical Care Program for the indigent which has been developed by the City Health Department.[1]

This program serves some 13,000 families of whom one-third are indigent and two-thirds—while otherwise self-supporting—are unable to meet the cost of illness. The stimulus to Richmond's present medical care program arose from the realization that adequate care could be provided only through a coordinated program which would include not only hospitalization, but medical services in the home and facilities for convalescence and rehabilitation as well. When it became apparent that the home care part of the service was inadequate to meet the community's needs, the Health Department revised the program in accordance

with recommendations given by a committee from the Richmond Area Community Council and approved by the Richmond Academy of Medicine.

The present program of home care has been developed in close association with the Medical College of Virginia. Its medical director is a professor of clinical medicine at the college. He is assisted by two other supervising physicians on the Medical College faculty who instruct the students and assume responsibility for patient-care. Second-year resident physicians in training at the school devote approximately two months to the home care program, and senior students serve for slightly shorter periods. The students are assigned cases—providing an extremely valuable supplement to their ward experience. Physicians are assisted in working out home care plans by the chief public health social worker and her staff; and nursing service is provided by the newly organized Community Nursing Service, formed from a merger of the Instructing Visiting Nurses Association and the Nursing Division of the City Health Department. Housekeeper service is available through the Family Service Society.

In spite of the many new and expanding features of this medical care program, the cost for operation of the Medical Aid Bureau has not increased appreciably during the five years of the present program, since an economy has been effected by reduction in length of hospital stay per patient and in many other ways.

This seems an admirable example of imaginative, cooperative community effort which should markedly improve the quality of medical care provided for lower income groups and should be of substantial value in broadening the education given to medical students.

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1. Coordinated Medical Care. Virginia Health Bull. Vol. 6, Series 2, No. 4 (Aug.), 1953.

Health Education in the Philippines

✣ A recent report [1] of the Expert Committee on Environmental Sanitation of the World Health Organization tells a story which admirably illustrates the basic principles of community health education, in the most modern sense of the term.

The scene was a small village in the Philippines where no up-to-date sanitary facilities existed, in spite of a formal regulation on the statute books requiring adequate toilet facilities for every dwelling. Vigorous attempts to enforce the law induced only an occasional sanitary privy, which was always kept locked, except on the rare visits of the sanitary inspector.

Then a real health educator hit on the right approach. A proposal was made for a routine examination of the stools of children; and this at once struck a responsive chord. The mothers knew that many of their children had intestinal trouble; and when the survey showed that 73 per cent of the children were harboring some sort of intestinal parasite the picture changed. Here was a "felt need"; and the community was ready for better methods of handling intestinal discharges. But before progress could really be accomplished it was necessary to demonstrate a practical and economical method of solution, one endowed with local social prestige and not enforced from without. A native contractor was found who could supply concrete toilet bowls at a cost of $4.50 each (instead of $40 for the cheapest imported commercial product). Such a toilet bowl was first installed in one of the schools and then in the homes of the teachers. Today, out of 251 families in the district, only eight remain without such sanitary provision.

Could there be a neater example of the basic principles of modern health education, which involves "leading out" from the needs and habits of the population concerned, rather than indoctrination from above?

1. Tiglao, Teodora V. Health Education Aspects of a Sanitation Programme in a Philippine Rural Area. WHO Expert Committee on Environmental Sanitation. WHO/Env. San./49, May 11, 1953.

The Role of Epidemiology in the Control of Tuberculosis

✣ Dean Thomas Parran of the School of Public Health in Pittsburgh has recently given us an admirable up-to-date review [1] of our progress in the control of tuberculosis, the study of which we strongly recommend to our readers.

Dr. Parran makes an especially important point when he emphasizes the desirability of routine "sole leather" epidemiology in the control of this disease. A half a century ago, the distribution of the tubercle bacillus was so universal that epidemiological procedures had little value. Today, the picture is a wholly different one; in many communities cases of tuberculosis (and of syphilis) are so infrequent that the disease exists in relatively small household, neighborhood, or occupational epidemics. It is important, in such areas, to investigate the contacts of every new case with the same care as would be given to a case of smallpox or diphtheria.

That the present situation is far from such an ideal is indicated in a study [2] by Robert J. Anderson, Herbert I. Sauer, and Roger L. Robertson. They report an analysis of tuberculosis case registry statistics for areas including about half the population of the United States. The analysis indicated an average of 339 known significant tuberculosis cases and 159 known active cases per 100,000 population. In 43 per cent of the cases living at home, the sputum status was unknown to the health departments reporting.

1. Parran, Thomas. Tuberculosis: A Time for Decision. Pub. Health Rep. 68, 10:921 (Oct.), 1953.
2. Anderson, Robert J., Sauer, Herbert I., and Robertson, Roger L. Tuberculosis Cases Known to Health Departments. Ibid. 68, 7:641–646 (July), 1953.

Clearing House on Public Health Salary Information and Personnel Needs

Field Training for Statisticians

Training of Health Statisticians is the report of a conference held in May, 1953, at the University of North Carolina School of Public Health. The conference, concerned with increasing the supply of health statisticians while at the same time improving the training so as to obtain agreed upon standards, reviewed the current situation in training health statisticians and attempted to define the objectives of training.

The conference made seven basic recommendations about field training of health statisticians. A clear distinction was made between clinical education that is an integral part of the statistician's total professional training and inservice training designed to increase the professional competence of statistical personnel presently employed by health agencies.

The conference, sponsored by the Statistics Section of the American Public Health Association, was made possible by a grant from the W. K. Kellogg Foundation. It was attended by 19 persons—including statisticians from the faculties of schools of public health, from various health and demographic agencies as well as by a health officer.

A limited supply of copies is available for distribution from the American Public Health Association, 1790 Broadway, New York 19, or from Professor Bernard C. Greenberg, University of North Carolina School of Public Health, Chapel Hill.

Recruiting Medical Social Workers

It will be remembered that the June, 1953, Journal (p. 770) reported on the recruitment programs of several national professional organizations. One of these, the American Association of Medical Social Workers, has now made public a six-months' progress report that was presented at a meeting of its Recruitment Advisory Committee in August.

In the six months of the program, in recognition of the field's interdependence in personnel matters, cooperative relationships were established with a number of other organizations such as the American Public Health Association, National Vocational Guidance Association, Council on Social Work Education, among many others, and an advisory committee set up of such agency representatives.

The city of Pittsburgh is serving as a test area for a recruitment program, using the technics and materials being developed on the national level. By the end of June, two students from the Pittsburgh area had enrolled for the fall semester at the University of Pittsburgh, others were exploring other schools, and several undergraduates had become interested in social work.

A recruitment workshop had been held in May to which each local unit of the national association was invited to send representatives. A dramatized radio program, The Long Journey Home, had been given over a nationwide radio hookup followed by 117 inquiries from 31 states within three weeks. The records of this program have been made available on loan to local groups.

Other materials that have been prepared are an illustrated folder for popular use, Inside Medical Social Work; a 35 mm film strip with synchronized platter, Member of the Team; a Re-

cruitment Guide for the conduct of local community recruitment programs; a Clip Sheet of news for press distribution; and a Report of Pittsburgh as a Test Area.

Among the recommendations made at the August meeting were for "persistent" efforts toward developing an integrated recruitment program for the social work field, further developing relationships with welfare, health, education, and vocational guidance groups; for the immediate future giving priority to strengthening local recruitment programs; developing new materials and further use of media of mass communication; and the development of a broad program of public relations of which recruitment activities would be an essential part.

At the end of the year, it was announced that the National Foundation for Infantile Paralysis had renewed its grant for another year thus enabling the extensive recruitment program to be continued. The program will henceforth be directed from the Washington office of the association, in charge of a recruitment secretary still to be appointed.

A Doctor Recruitment Leaflet

The New York Life Insurance Company has made available in booklet form, "Should Your Child Be A Doctor," by Walter C. Alvarez, M.D., emeritus consultant in medicine at the Mayo Clinic. It outlines the kind of qualities a person should have to go into the medical profession and the extent and cost of necessary training. It should be useful particularly to parents and vocational counselors.

The article was originally a double-page advertisement in Colliers, Ladies' Home Journal, and the Saturday Evening Post as one of a series the company is running on choosing a career. Because of the many requests for it from parents, students, educators, and physicians, it was decided to reproduce the advertisement both in booklet form and in flat reprints for bulletin board use.

Public Relations Department, New York Life Insurance Company, 51 Madison Ave., New York 10, N. Y.; free.

Michigan Nutrition Apprenticeship

In the fall of 1952, the Michigan Department of Health, through its Committee on Recruitment and Training, began a nutrition apprentice training in cooperation with local health departments. After a period of orientation in the state office one apprentice each was assigned to the Calhoun and Wayne County Health Departments for a year's training with a stipend of $3,600.

Candidates with a bachelor's degree and a major in home economics with two years of experience were selected by the Recruitment Committee. The report of these two apprenticeships by the apprentices themselves have now been made available by the Michigan Department of Health. For the year 1953–1954 a second plan has been developed cooperatively with Michigan State College.

Atomic Energy Fellowships

The Oak Ridge Institute of Nuclear Studies is now accepting applications for U. S. Atomic Energy Commission fellowships in industrial hygiene and radiological physics. These fellowships are supported by the AEC "to supply the critical need for personnel trained in these fields." The basic stipend is $1,600, plus tuition and laboratory fees and an allowance of $350 for each dependent.

The industrial hygiene fellowships support a limited number of students for the master's degree in this field at the University of Pittsburgh Graduate and Harvard University Schools of

Public Health. The program includes, in addition to the usual industrial hazards, those peculiar to the atomic energy program.

The radiological physics fellowships consist of three programs, for each of which up to 25 fellows may be appointed. In each of the programs, nine months of course work at the university is followed by three months at the cooperating AEC installation. The three programs are being carried out at Vanderbilt University and Oak Ridge National Laboratory, the University of Rochester and Brookhaven National Laboratory, and the University of Washington and Hanford Works.

Application forms and further information from Fellowship Office, University Relations Division, Oak Ridge, Institute of Nuclear Studies, P. O. Box 117, Oak Ridge, Tenn.

1953 Public Health Nurse Salaries

The National League for Nursing published its 1953 report of salaries of public health nurses in the October, 1953, issue of Nursing Outlook. During the past year salaries of staff nurses in nonofficial agencies have increased 7 per cent, while supervising nurse salaries in nonofficial agencies and in boards of education increased 6 and 5 per cent, respectively.

The study was based on a sample of some 760 agencies returning questionnaires of 1,216 selected from among a total of about 6,000. Salaries paid were reported for nearly 10,000 persons, more than half of whom were in local official health units.

Postdoctoral Statistics Fellowship

In order to acquaint established research workers in the biological, physical, and social sciences with the place of modern statistical analysis in planning experiments and other research programs and in evaluating empirical data, the University of Chicago is offering three $4,000 postdoctoral fellowships in statistics. Holders of the doctor's degree or its equivalent in research accomplishment are eligible. Closing date for applications is February 15, 1954. Committee on Statistics, University of Chicago, Chicago 37, Ill.

Sewage Treatment Short Course

A basic short course offering sewage treatment operators an opportunity to review fundamental material essential to good plant operation is announced by the Massachusetts Department of Public Health at the New England Field Training Center, University of Massachusetts, Amherst, March 22–26, 1954. The New England Field Training Center is a cooperative activity of the University of Massachusetts, the State Department of Public Health, and the Communicable Disease Center of the Public Health Service.

Further information from Division of Training, Massachusetts Department of Public Health, 543 State House, Boston.

Engineering Salaries Rise

Engineering graduates of New York University in 1953 started working at salaries that averaged 5 per cent more than in 1952. Their average starting salary was $345 a month, with 71 per cent of the engineers taking jobs in private industry. Among other facts found in the report of an employment survey by Dean Thorndike Saville of NYU's College of Engineering is a range of monthly starting salaries from $270 to $412. Engineering salaries have increased during each of the last seven years, except 1949, and current starting salaries are up 52 per cent over 1947.

The report indicates that nearly half of the engineering graduates were hired

on the campus; that only 9 per cent of the students took civil service jobs; and that 15 per cent went into full-time graduate study. A possible commentary on the salary situation is the fact that none of the several sanitary engineering majors accepted offers in public health organizations.

Industrial Medicine Fellowships

The Institute of Industrial Health of the University of Cincinnati announces for qualified candidates a limited number of graduate fellowships in preparation for industrial medicine practice. Any registered physician, graduate of an approved medical school, who has completed satisfactorily at least two years of training in an accredited hospital may apply. A two-year period of intensive training in industrial medicine and a year of practical experience under adequate supervision in industry leads to the degree of doctor of industrial medicine.

Stipends vary in accordance with the marital status of the individual, from $2,100 to $2,700 in the first year and $2,400 to $3,000 in the second year. In the third year the candidate will be compensated by the industry in which he is completing his training.

Additional information from the Institute of Industrial Health, College of Medicine, Cincinnati 19, Ohio.

A New Health Manpower Source Book

The third in the series of Health Manpower Source Books in preparation by the Public Health Service has recently been published. Of a total of nearly 75,000 social workers in the United States at the beginning of 1953, nearly 3,300 were found to be medical social workers. On the basis of a 1950 survey more than three-fourths of these were employed in hospitals and clinics. The study includes a detailed analysis of salaries. Highest salaries were paid by the federal government, lowest by state and local governments. Between these two were those paid by private organizations. As to region, the South with the fewest workers paid the highest salaries in each category. The one exception was among private organizations which paid the highest salaries in the West.

A series of 30 tables summarize detailed information on employment, salaries, training, school enrollment, and many other items.

Public Health Service Publication No. 263. Washington, D. C.: U. S. Gov. Ptg. Office; 40 cents.

Our Local Public Health Resources

The Public Health Service has published its 1951 analysis of local public health resources, including personnel, facilities, and services. Roughly it shows some growth in total coverage by full-time health departments, with an increase in both city and single county departments and state service districts and a slight decrease in local district departments.

Just what actual changes are going on, however, is hard to determine because, first of the change of definition of a full-time unit in 1950, and of the reporting of identical situations in some states in one way one year and another the next. Examples are: New Mexico, the 10 districts of which are reported as local districts in 1950 and as state service districts in 1951. For South Carolina an increase of 15 units is reported apparently because many of the long-standing bicounty units were considered as single county departments in the 1951 report of resources and facilities. What does seem evident is that slowly a larger and larger proportion of persons is having the benefit of organized local health services. Including state service districts 76 per cent of the

country's total population was served in 1951 as compared to 71 per cent in 1950.

As to personnel, of the more than 34,000 workers in official health departments reported in 1951, more than one-third were public health or clinic nurses and nearly one-fourth were environmental sanitation workers. The ratio of personnel to population varied from only 17 per 100,000 in state service districts to 37 in city health departments. The report estimates a shortage of nearly one-third in the staffing of the departments, 46 per cent for physicians, 50 per cent for nurses, 22 per cent for sanitation personnel, and 17 per cent for clerks.

Appearing practically simultaneously is a more detailed report on staffing of state local health departments in 1951. As of April 16, 1951, 48 state and territorial and 1,293 local health departments reported that 10 per cent of budgeted positions were vacant. The largest number of vacant positions, 1,108, were for nurses but the largest percentage of vacancies was among psychiatric social workers, the only group among which more than a fourth of the budgeted positions were unfilled. Of dentist positions 21 per cent were unfilled, of health educators 20 per cent, of physicians 19 per cent, and of engineers 15 per cent.

Report of Local Health Services, 1951. Staffing of State and Local Health Departments, 1951. Single copies of each are available without charge from the Public Health Service, Washington, D. C.

Fellowships in Medical Sciences

The National Research Council of the National Academy of Sciences calls attention to the numerous postdoctoral fellowships in the medical sciences which it administers or recommends. They are:

American Cancer Society Postdoctoral Fellowships in Cancer Research
British-American Exchange Postdoctoral Fellowships in Cancer Research
James Picker Foundation Postdoctoral Fellowships in Radiological Research
Lilly Research Laboratories Postdoctoral Fellowships in the Medical Sciences
National Tuberculosis Association Postdoctoral Fellowships in Tuberculosis
Rockefeller Foundation Postdoctoral Fellowships in the Medical Sciences

The fellowships provide special opportunities for advanced study and training in fundamental research. They are intended for young men and women of unusual promise and ability in the early stages of preparation for an investigative career. The annual basic stipend ranges from $3,000 to $3,500 with additional allowances for dependents.

Information about applications for the academic year 1955–1956 should be requested from the Fellowship Office, National Research Council, 2101 Constitution Avenue, N.W., Washington 25, D. C.

Credit Lines

The Journal cannot furnish copies of items mentioned in Credit Lines. Please send requests to the addresses given.

The Child's Hospital Experience

Hospitalization can be a terrifying experience for a child who is not acquainted with hospital routines. To help prevent anxiety when hospitalization is necessary, the Children's Medical Center of Boston has published "Johnny Goes to the Hospital," an attractive 32-page booklet by Josephine Abbot Sever and Sydney S. Gellis, M.D., and illustrated by Mary Stevens. Printed in large type, written in simple style, and generously illustrated with charming colored pictures, it offers parents of young children an easy and attractive way of preparing their youngsters for an expected period of hospitalization. This is excellent health education material when used by physicians, hospitals, health agencies, and parents at the appropriate time. Public Relations Department, Children's Hospital, 300 Longwood Ave., Boston, Mass.; $1; 75 cents for orders of 6 or more.

A Doctor Looks at Drug Addiction

A welcome addition to the scant literature on narcotics is "Narcotics and Youth" by Hubert S. Howe, M.D., who was a member of the Welfare and Health Council's Committee on the Use of Narcotics Among Teen-Age Youth of New York City. Described as a handbook of basic information, among its purposes is to dispel some popular misconceptions about drug addiction. Dr. Howe emphasizes that any one, not merely the maladjusted or mentally deficient, can become a victim if he uses narcotics often enough.

The pamphlet outlines the characteristics of narcotic drugs, the seriousness of their effects, and reasons why people become drug addicts. He examines treatment available for drug addicts and underscores public education as a weapon against the spread of illicit drug use.

Dr. Howe also cites evidence that in recent years young people particularly are being duped by drug peddlers and racketeers who are interested in developing a wider market for their illicit trade. A 16-point basis for an education program among youth, as well as a bibliography, is included.

The pamphlet has been published by the Brook Foundation, 51 Lakeside Ave., West Orange, N. J.; 50 cents, reduction for quantity orders.

Driver Education in High Schools

The fact that accidents, and many of them traffic accidents, constitute the largest single cause of death of children over a year old gives point to the program of the Association of Casualty and Insurance companies. This agency recently awarded 23 state plaques in its Sixth Annual Driver Education Award, with top honors going to Oklahoma, Delaware, and Massachusetts, each of which scored more than 165 points of a possible 200 in the scoring system used.

The report of the awards by the agency included a tabulation showing that in the year 1952–1953, 43 per cent of the high schools in the United States offered driver education courses and that 54 per cent of all high school students were enrolled in such courses. In five years the number of schools giving driver education courses has increased

43 per cent, while the number of students enrolled has increased more than two-thirds.

Local Planning for Child Health

An excellent pamphlet has been made available by the American Academy of Pediatrics (610 Church St., Evanston, Ill.). Entitled "The Physician and Child Health Services, An Interpretive Report and Guide to Local Planning," it is published as a supplement to the September, 1953, issue of Pediatrics (Vol. 12, No. 3, Part II). The purpose of the report is "to give physicians a better understanding of community health services for children," but its 27 pages are full of well organized and thoroughly interesting facts and recommendations of concern to all health workers.

The document, using the findings of the academy's Study of Child Health (launched in 1946) as background material, not only presents a factual outline of existing health services for children but looks ahead to ways of improving them. Under the two headings "areas of need" and "suggestions for local and state planning" the guide makes many practical suggestions as to the "whats, whys, and hows" of community services — hospital care, child health conferences, school health, care for the physically handicapped, mental hygiene, public health nursing, and dental care.

The importance of physician leadership in supporting existing public health services and helping to develop needed additional health services for children is stressed.

Educating Hospitalized TB Patients

An experiment in educating tuberculosis patients in a hospital has been described for the future guidance of similar projects or, as is said in the report itself, to "be of value to others working on ways and means of effectively helping patients to an understanding of their role in their own recovery." In 1948 the New York Hospital and the New York Tuberculosis and Health Association began a health education program for tuberculosis patients in the hospital. How it was set up, what staff on each side were involved, what materials were used, and how joint planning was worked out are all described as well as some suggestions for the future. It is hoped to expand the program into one of family education.

"A Patient Program for the Tuberculosis Patient in the New York Hospital." Health Education Division, New York Tuberculosis and Health Association, 386 Fourth Ave., New York 16, N. Y.; 30 cents.

The Sunny Side of Cerebral Palsy

"Courage, Achievement" is a picture book—"a true story of human beings being remade." It was prepared by the New York City Department of Health for distribution particularly to parents with homebound cerebral palsied children. The children are shown in a regular school set up with the same needs as other children. Its whole emphasis is upon the things that can be done to make the lives of the cerebral palsied approach the normal. The pictures are taken from a public school in New York City, where the Departments of Health and Education, in cooperation with several private agencies, are operating four cerebral palsy units of 25 children each in the public schools. The pamphlet is being distributed without charge by the United Cerebral Palsy Association, 50 W. 57th St., New York.

Industry Deals with Alcoholism

"An attempt to translate and apply broadly and generally the research work

being done on alcoholism — the problems, the dangers, and the treatment" is the announced program of the newly formed Wilmington Association for the Study of Alcoholism in Delaware. Its plan, said to be the first time a program of this scope has ever been undertaken, is to work with Alcoholics Anonymous and other interested groups in the general public of the area in a program of preventive medicine and to increase understanding of the problems involved.

The movement grew mainly out of the efforts of George H. Gehrmann, M.D., medical director of the DuPont Company. Dr. Gehrmann has fostered AA not only throughout his company, but in medical organizations throughout the country. Since 1943 the DuPont Company has had an extensive program in rehabilitation of alcoholics. The new association is a recognition that similar work needs to be done in other plants and among the general public. Dr. Gehrmann, one of the four trustees, emphasizes that this is a "program of education to break down the stigma attached to alcoholism and to gain recognition of it as a disease which needs treatment."

The association has opened offices in Wilmington where help and consultation is available to individuals through Alcoholics Anonymous.

Keeping Current on Health Research

"An Inventory of Social and Economic Research in Health" is the second edition of this compilation by the Health Information Foundation. It contains brief abstracts of projects being conducted or recently completed by various types of agencies. The listing is in six main categories:

Health Levels, Facilities, and Services
Health Personnel
Individual and Group Participation in Health Programs
Industrial Health
Correlating Health Levels with Economic, Sociological, and Psychological Factors

A total of 262 studies are listed, one-half of them in the first category.

Health Information Foundation, 420 Lexington Avenue, New York 17, N. Y. No information as to price.

Personal Fitness for Boys

The Boy Scouts of America has issued "Personal Fitness" in its Merit Badge Series. This is an excellent illustration of health education tailored to its audience. The emphasis is upon being grown up and on prevention and not on becoming "sissy" about the little aches and pains of everyday life. The text is by J. Roswell Gallagher, M.D., chief of the Adolescent Unit of the Boston Children's Medical Center. The anonymous illustrations are no little part of getting the message across. The pamphlet is available from any stores that sell Boy Scout equipment or from the New York, Chicago, or San Francisco offices; 25 cents.

Worth Acquiring

Administrative Practices and Personal Adjustment in Homes for the Aged has suggestive material for those persons engaged either in planning and operating institutions for the aged or in their official or unofficial supervision. The study, done as a Ph.D. thesis, was made to test the hypothesis that "there is an association between the policies and practices of a home for the aged and the adjustment of the residents in it."

Three different types of homes were studied and interviews held with 217 residents. A relatively equalitarian structure, a fairly homogeneous population, and admission policies that evaluate the applicant's need for and ability to make use of institutional care each have relevance to the personal ad-

justment to the home. Rules and regulations are less necessary in a home that promotes the formation of primary groups drawn together by friendships and special interests.

Although the author, Philip Taietz, says his report is not a manual for administrators of homes for the aged, he does suggest an even dozen of recommendations toward which the study points. Bulletin 899, Cornell University Agricultural Experiment Station, Ithaca, N. Y. No information as to price.

Selected Films on Health Education Reviewed In the Journal of the American Medical Association, a mimeographed list, has been released by the Committee on Medical Motion Pictures of the association. Its purpose is to present, in one booklet, all of the films suitable for lay audiences that have been published since September, 1946. Copies are available upon request from the Committee on Medical Motion Pictures, American Medical Association, 535 North Dearborn St., Chicago 10, Ill.

Child Care and Development from Birth to Five Years is a short neat 23-page guide, prepared by the public health nurses of the Community Service Society as one of its "Family Health Series." First printed in 1938, it has been brought up to date.

Its purpose is to provide a ready reference for public health nurses in their health services to families. It would also be a useful tool for nursery school personnel or others who deal with preschool children. The content is based on the best standard texts and references and has been reviewed by a group of competent specialists from several fields. The guide is logically organized according to age periods under the broad headings: Development, Food, Play Equipment, Recommended Practices for Parents. The style of presentation is attractive, succinct, and clear, and the material highly practical and carefully selected. Community Service Society, 105 East 22 St., New York 10, N. Y., 15 cents, reduction on quantity orders.

Health Services in City Schools is the latest study of the U. S. Office of Education which has made studies of the school health services of the nation since 1930 at 10-year intervals. Undertaken in cooperation with the Public Health Service and the American Medical Association, the study shows the present status of various phases of school health services in cities with populations of 2,500 or more. It also indicates how administrative patterns and service have developed over the 20-year period. The many figures and tables are summarized and briefly discussed, and valuable indexes of program completeness are brought to attention. Bulletin No. 20, Gov. Ptg. Office, Washington, D. C.; 1952; 25 cents.

Safer Wisconsin Homes has been prepared by the Wisconsin State Board of Health as a guide for program leaders. In small and attractive compass, it has a wealth of information upon which local home accident programs can be based. A map and a table show the home accident death rates for each county for a four-year period. Among the 71 counties of the state, the range is from 5.7 to 60.8 per 100,000 of population. The pamphlet is effectively illustrated and printed in color. It includes a suggestive list of agencies that have carried on prevention programs as well as a list of available publications and films. This ought to have many valuable suggestions for other states that might wish to plan similar guides.

Traveling with this guide is a series of useful leaflets on various aspects of prevention — home nursing care, rat control, insect control, chest x-rays,

food poisoning. Each is written for the layman, with clear simple explanations and instructions. Wisconsin State Board of Health, Madison 2, Wis.

Nutrition Education in Industry has been prepared by the Safety and Occupational Health Bureau of the Metropolitan Life Insurance Company for the use of employers in a nutrition education program. It lists a dozen suggestions for carrying on such a program and lists relevant materials—exhibits, films, pamphlets—that the Metropolitan has available. Although intended primarily for the doctors and nurses in Metropolitan's group-insured organizations, single copies are available to others without charge. Metropolitan Life Insurance Company, One Madison Ave., New York 10, N. Y.

Health in Your Town is a 41-frame 35 mm. film strip in full color designed as a junior high school teaching unit and published by the National Foundation for Infantile Paralysis. A study of community health, planned especially for use in health and social studies classes, it was developed in response to repeated requests from junior high school teachers. It has been reviewed and reportedly enthusiastically received by educators. Accompanying it is a Teacher's Guide of 12 pages. National Foundation for Infantile Paralysis, 120 Broadway, New York 5, N. Y. On loan for a two-week period, free of charge. Purchase at $2 per print.

Dental Health Facts for Teachers has been prepared by the American Dental Association for teachers on any level of education. It is described as a source book of "basic facts and information on dental health—not a curriculum guide." The pamphlet has excellent illustrations of dental growth and decay. A brief bibliography of materials for teachers and pupils is included. American Dental Association, Chicago 1, Ill., 25 cents, reductions for quantity orders.

Annual Reports

The 1953 Annual Report of the National Society for Crippled Children and Adults is handsomely illustrated with photographs of actual facilities or treatment with emphasis upon happy though handicapped children. Among the interesting items it reports is a survey among 64 large life insurance companies indicating a general trend "toward liberalizing underwriting practice to permit many handicapped persons to obtain insurance protection."

The society which with its 49 state societies expended more than $8,000,000 in the year ending August 31, 1952, receives 70 per cent of its income from Easter Seal sales. Nearly 50 per cent of expenditures were for direct aid to patients for medical care, rehabilitation, prosthetic devices, and others.

The society's offices are at 11 South LaSalle St., Chicago 3, Ill.

The American National Red Cross Annual Report for the year ending June 30, 1953, has had no expense spared in its preparation. Well printed, on a good grade of paper, with clear photographs and effective use of color are all a good insurance against vertical filing without being read. Veteran services, disaster relief, community, and world-wide services, totaling a $40,000,000 annual expenditure, are each graphically described.

Books and Reports

All reviews are prepared on invitation. Unsolicited reviews cannot be accepted.

Your Diabetes and How to Live with It—*By Floyd L. Rogers and Ruth M. Leverton. Lincoln, Neb.: University of Nebraska Press,* 1953. 113 pp. Price, $2.50.

Physician and nutritionist have collaborated to prepare this handbook for diabetic patients "with the hope that their disease may be better controlled, and in so doing their lives made longer, more useful and happier." Dr. Rogers is an internist in Lincoln, Neb., and founder of the Springdale Camp for Diabetic Children. Dr. Leverton is known for her research and teaching in human nutrition at the University of Nebraska.

The first section, entitled, "Doctor to Patient," explains in simple terms what diabetes is, the role of insulin and diet in the treatment of the disease, and other useful information. The patient's responsibility for the control of his disease and his need for continuous medical supervision is presented intelligently. The authors frankly state that diabetes is a handicap—but that the more a diabetic learns about his disease the more his handicap can be overcome.

The second section, "Dietitian to Patient," includes food preparation instructions and the exchange lists and six meal plans prepared by the Joint Committee of the American Dietetic Association, the American Diabetes Association, and the Public Health Service. In addition to the meal plans (four for adults and two for children) prepared by the committee, the authors have added six more plans for adults, ranging from 860 to 4,000 calories, and four more for children and young adults, ranging from 2,200 to 4,000 calories. These additional meal plans should prove helpful to the physician in meeting his patients' individual needs.

The third section is devoted to recipes, including their exchange value.

It is regrettable, at least to this reviewer, that there are no illustrations to aid the patient. LINNEA ANDERSON

Films in the Cardiovascular Diseases: Survey, Analysis and Conclusions — *Medical Audio-Visual Institute of the Association of American Medical Colleges. New York: American Heart Association,* 1953. 128 pp. Price, paper cover $1.50; cloth $2.00.

The motion picture has become an established instrument of education in medical schools. This is not strange for cinematography, pre-empted by the entertainer, is also an excellent means of transmitting factual ideas visually and of recording what only a few eyes can see. Until recently, however, the instructor has had no criteria to guide him in selecting from the vast medical film literature, good and bad, those films that would serve him best.

In 1950 the Medical Audio-Visual Institute began a program of evaluation of medical motion pictures according to methods devised by Adolf Nichtenhauser. Some 400 films have thus far been reviewed, and out of this experience has come the basis for a broad philosophy of medical audiovisual teaching aids. The brochure describes the method of reviewing films; presents detailed reviews of 62 films dealing with cardiovascular subjects; lists many more, including 17 health films for nonmedical audiences; and supplies information about production and distribution.

To the health educator this book is

valuable because it casts light on an ill-used tool of communication that has superb possibilities. He has long since learned that neither the applause meter nor the blurbs of the enthusiast are reliable guides in judging the teaching value of a health movie. While the report deals mostly with medical teaching films, the principles employed apply equally to evaluation of health movies. The present chaotic health movie situation needs reform—careful study of this report will point the way.

H. E. KLEINSCHMIDT

Pediatrics—*By L. Emmett Holt, Jr., and Rustin McIntosh (12th ed.). New York: Appleton-Century-Crofts,* 1953. 1,542 pp. Price, $15.00.

Any medical text with a history of 57 years and 12 editions is worthy of attention. The critical reader will not be disappointed in this revision. The authors and their 72 collaborators have brought the new edition up to date, with emphasis on chemotherapy and hormonal therapy; the sections on pediatric cardiology, pediatric surgery, and new concepts of body fluid physiology and pathology have been given special attention. There is a thrilling list of the advances in pediatrics that have taken place in the past decade, although one of the most significant from the public health point of view is taken for granted by the authors, namely, pediatrics as the outstanding example of the application of preventive medicine in medical practice.

A review of the communicable disease section indicates conformance with modern concepts, including an excellent chapter on the streptococcal infections. The treatment of BCG is conservative but hopeful. Public health workers will find this volume a gold mine of useful information. REGINALD M. ATWATER

Health and Human Relations—*Report of a Conference on Health and Human Relations Held at Hiddesen near Detmold, Germany, August 2–7, 1951. New York: Blakiston,* 1953. 192 pp. Price, $4.00.

This book should be of great interest to public health people concerned with the mental health problems of our society and their solutions. Although the book is focused in terms of the mental health problems of postwar Germany, it becomes crystal clear in reading the discussion that these problems are in no way different from those faced by people in this country and perhaps in many other countries.

A Conference on Health and Human Relations, the third of a series, was held at Hiddesen, Germany, in August, 1951, under the sponsorship of the Josiah Macy, Jr. Foundation. Its purpose was to mobilize the interest in human relations and initiate steps toward the solution of problems identified by leaders in small group discussions. Participants in the conference were 23 men and 16 women representing 16 different professions and coming from 7 countries. No one can read their brief autobiographical sketches without being impressed by the wealth of resources available for discussion of the conference topic. In tune with the recommendations of the conference, the report not only contains the usual factual information about the program, high points in discussion, and recommendations, but also describes its organization and methods and reflects its spirit and the dynamics of its development.

Part I of the book outlines the conference plan and contains reports of working groups on mental hygiene education, mental health in modern society, sources of social tensions in postwar Germany, and the promotion of the mental hygiene movement in Germany. The discussion of these working groups is summarized with attention focused upon the recommendations developed in work sessions and adopted by the con-

ference as a whole. As reported in the introductory chapter, many specific steps have already been taken toward fulfilling these group recommendations. Part II contains informal presentations by key members of the Conference on Health and Human Relations, the "Problem of Neuroses," and the "Sense of Inner Identity." In the discussions following these informal reports, the viewpoints of other members were reported. Part III summarizes the comments of the closing session. The Who's Who appendix might well be the place to start the book. At any rate, the interested reader will be intrigued by the possibilities of comparing participants' autobiographical comments with the questions and comments they raised.

The book is a challenge to those who question whether discussion conferences can yield interesting and fruitful reports for others than those present.

ANDIE KNUTSON

Schools of Public Health—*U. S. Department of Health, Education and Welfare. PHS Publication No. 276. Washington, D. C.: Gov. Ptg. Office,* 1953. 110 pp. Price, $.35.

This is a factual report prepared by staff members in the Division of Public Health Methods, Public Health Service and made at the request of the Association of Schools of Public Health. An Advisory group composed of representatives of the schools of public health, the APHA and other interested agencies under the chairmanship of Lowell J. Reed, Ph.D., planned the study and advised throughout.

As Dr. Reed points out in the preface, the goal has been the preparation of a comprehensive description of the schools of public health, their organization, programs, and needs. Professional education, he points out, is a relative newcomer in the broad field of education in the health professions and has been characterized by independent thought, active experimentation, and wide diversity of approach. There are well documented descriptions of the schools in the United States, their programs, facilities, staffs, and students. Considerable emphasis is placed on the financial status of the schools and their future needs. The data relate to the 1949–1950 school year.

In spite of the fact that the data are now three years out of date, this document will have wide usefulness among the schools and among those who are making long-range plans for the education of public health workers. It should be read along with a brochure, *The Accreditation of North American Schools of Public Health* by Professor Winslow which summarizes eight years of effort by the Committee on Professional Education, APHA, in starting this program. (See *A.J.P.H.* 43, 5:630 (May), 1953).

REGINALD M. ATWATER

Toxicity of Industrial Organic Solvents—*By Ethel Browning (rev. ed., 1952). Health Research Report No. 80. London: Her Majesty's Stationery Office,* 1953. 411 pp. Price, $8.00.

The book is a compilation of toxicity information on 126 single solvents (or fractions), 28 more than were included in the first edition. For those who would like to see informaton on solvent mixtures, so commonly in use now, this is not to be found in this volume, as very little information of this sort is yet available. Made up in the same general format as the previous edition, each solvent is presented according to formula, properties, chief uses, M.A.C. value, when known, toxicity (general), comparison with other solvents, industrial experience, methods of analysis in air and in body tissues, toxic effects in animals and in man, subdivided according to acute and chronic effects, with special responses emphasized. The

material on each solvent has often been considerably expanded from that in the first edition; indeed, much material of the old volume has been rewritten or revamped in parts in light of new information. Despite these additions, the book possesses little extra bulk because of the use of smaller but still easily readable type, and the arrangement of references at the end of chapters instead of at the end of each solvent, thus avoiding some duplication.

Comparison with other texts on the toxicity of solvents reveals that the book presents more complete coverage of the subject literature than any other that has come to the attention of the reviewer.

The most unfortunate aspect of the book stems from the long interval between the last date of the literature search (1948) and the publication date of 1952. This has resulted obviously in the omission of a few important new solvents upon which information has been developed and references to certain of the newer investigations on metabolism and analytic methods of various solvents.

Despite this fault, its wide coverage of each solvent makes the book an almost incomparable reference source for those concerned with occupational health problems arising from organic solvents. HERBERT E. STOKINGER

Public Health Nursing Care of the Sick at Home, Report of Conference on — *Department of Public Health Nursing. New York: National League for Nursing*, 1953. 57 pp. Price, $1.00.

This brief volume is packed with informative material equally valuable to the neophyte and the expert, if there be such in this field. It is a report of a working conference on the subject of Public Health Nursing Care of the Sick at Home. The essence of five fruitful days of discussion are presented in the first third of the booklet, followed by the four papers which set the stage for these discussions. Although this is the proper order for such a report, the average reader would profit by reading the prepared papers before perusing the summary of the discussions or the conclusions and agreements.

It is inevitable in such a report that omissions far exceed inclusions. Although the editorial decisions were unusually competent, one looks in vain for any identification of the compiler.

Basic areas of disagreement within the conference group were relatively few. Those that were unresolved are generally recorded by footnotes which do not adequately portray either the degree or the type of disagreement. Brevity here suggests more serious conflicts than actually existed.

This report should be read for stimulation as well as information by all concerned with community health services.

W. C. SPRING, JR.

Group Work with the Aged—*By Susan H. Kubie and Gertrude Landau. New York: International Universities Press*, 1953. 214 pp. Price, $3.50.

To anyone interested in old people as human beings and in helping them through group work to find happier solutions to the personal and social limitations imposed by old age in a world as yet unready to receive or keep so many of them busy and contented, as well as alive, this book is fascinating reading. It is extremely provocative, startlingly revealing, and decidedly helpful. It is a carefully documented record of experience—one might almost say, experimentation—in the first of the day centers to be established especially for socially deprived old people as a result of their increased numbers in this the twentieth century.

By the device of describing the nine-year development of the program of the center in its various parts, as the members of the center became ready for

changes through their own growth, this growth, as exhibited by their ability to adapt to change and to profit by the new opportunities provided, taking place concurrently with the growth of the understanding of the authors of the underlying reasons for the behavior of members and for their own attitudes, is very vividly portrayed. It is possible to follow step by step the slow process by which the members of the center became a group, to sense the patience required to work with presumably mature adults whose inexperience made them immature in such group relationships and activities, and to discern the skill required of staff to maintain these on sufficiently even keel to progress steadily toward the goal of self-government, with the acceptance of individual and group responsibility which this entails.

To this reader the section dealing with the so-called "nonparticipating members" is one of the most important contributions the book makes to the subject of group work with the aged. The keen perception and insight so essential to this work is nowhere quite so evident as in the analysis of the reactions of these seemingly passive individuals, whose need for what the center or the group offers may well be deeper than that of the more outgoing and apparently responsive members. More than that, these professional workers, recognizing that the basic need for affection and human companionship endures throughout all one's years, have been unafraid that friendship, openly expressed, would damage the professional character of their day-to-day personal contacts with members. It is not strange that group work with the aged as carried on at Hodson Memorial Center and reported here brings results which can be variously identified in the improved physical and mental health, in the improved emotional security and social adjustment of the individual, and in positive contributions by the group to the well-being of each other, their families, and the community.

OLLIE A. RANDALL

An Evaluation of Rehabilitation. Monograph I—*By Georgia F. McCoy and Howard A. Rusk. New York: Institute of Physical Medicine and Rehabilitation, New York University—Bellevue Medical Center,* 1953. 87 pp. Price, $1.00.

The evaluation of rehabilitation services requires a good deal of courage in view of the emphasis which this third aspect of modern medicine has received in recent years. Ingenuity, an unusual clinical honesty, and a variety of specialized skills in clinical and social study technics are also needed—and, of course, the money. The New York Foundation supplied the latter for such a study by the Physical Medicine and Rehabilitation Service of the New York University—Bellevue Medical Center. The study was under the direction of Georgia F. McCoy, M.S., and Howard A. Rusk, M.D.

Two hundred and eight cases discharged in 1949 from these services were studied in some detail as part of a total of 476 cases discharged in that year, all of which received at least brief study. The results are the ones we have grown to expect. The study suggests that, according to the criteria of the authors, 90 per cent of the individuals included in the study received some benefit. The percentages who shifted from wheel chair or bed to some degree of ambulation, from bed to some type of mobility, from no self-care to some degree of self-care, and from no work ability to significant work capacity, appears equally impressive.

One is forced to comment that one of the essential skills required for this type of study appears to have been lacking, since there is no evidence, at any point, of vertification of the significance of the many figures offered in regard to

statistical validity. Despite a sincere attempt to achieve objectivity in defining criteria, most of the standards used involve major degrees of subjective judgment. Even specifically measurable items, such as economic status, are unfortunately defined in subjective terms so that the reported results are not truly verifiable nor would they be comparable with other studies. This lack of sound statistical advice and planning is unfortunate. Soundly based studies of rehabilitation results are much needed for improvement of rehabilitation services and a better understanding of the needs of the handicapped. It is only a secondary goal of such studies to help sell rehabilitation programs. This appears to be a major objective of the study described.

All workers in rehabilitation, as well as those concerned with community health services, will nevertheless find this report both interesting and useful as one of the early attempts to develop a methodology for the study of rehabilitation results and as a source of information as to the undoubted positive values of a total rehabilitation process. It is to be hoped that this will provide a stimulus to further studies and better methods. JONAS N. MULLER

Doctors, People, and Government—*By James Howard Means. Boston, Mass.: Little, Brown,* 1953. 206 pp. Price, $3.75.

The volume by James Howard Means, M.D., emeritus professor of medicine at Harvard, who has been for 27 years chief of medical services at the Massachusetts General Hospital, presents in some 200 pages a clear discussion of the present state of medical care in this country. Oscar Wilde's shrewd observation that all criticism is a form of autobiography finds illustration in Dr. Means' freedom from much that could be confused with the official opinions of Organized Medicine.

The true nature, discussions, and relationships of the factors affecting preventive, curative, and rehabilitative medical care would probably be obvious if seen from above. Those of us here below, however, must rely on a sort of triangulation procedure in which the candid testimony of various observers — both their experiences and their opinions—are, like angular readings, informative and indeed essential in forming reliable estimates of reality. Not in place of, but as a manageable fraction of the enormous volume of the literature accumulating on the subject of medical care, Dr. Means' book offers a brief, readable, honest, and intelligent set of readings for the use of anyone in the field of Great Medicine who wants to know what it is all about. No one book is enough, but you could perhaps recall three hours last week that were spent "in the thick of thin things" and far less profitably than the time it would have taken to read *Doctors, People, and Government.*

ALAN GREGG

Handbook on Federal Grant-in-Aid Programs—*By the American Parents Committee, Inc.* New York, 1953. 216 pp. Price, $1.50.

As timely as tomorrow's newspaper, this source book is an indispensable tool for the citizens and the organizations into which they group themselves in understanding the federal grant-in-aid programs. These programs are now under study by a National Commission on Intergovernmental Relations created by the 83rd Congress at the suggestion of President Eisenhower. The commission is to make a report and recommendations by March 1, 1954. It is anticipated that this may be only a preliminary report with the final report awaiting more study.

In the meantime, this handbook describes the principal federally aided programs, the amounts going to each, and

the methods for finding out how much federal money is going into each community. It brings together information that is nowhere else available from a single source. And just before publication it was possible to bring it completely up to date with 1953 data.

Not the least important of the handbook's virtues are its suggestions and descriptions of community or state studies that can be, and in fact should be, made by state and local organizations in order to be aware of the impact of the grant-in-aid programs upon their own communities. The cooperation with the commission during the study and the readjustment of local programs and finances in the event of a reduction in grants-in-aid make it imperative that the information in this handbook be thoroughly digested by the citizenry. The future of grants-in-aid will affect the future of public health, welfare, education, agriculture, housing, transportation, and community development generally.

The American Parents Committee is to be congratulated on its foresight and public service in making available to citizens, while the National Commission study is in process, this detailed information about the 50 or more federal grant-in-aid programs that constitute approximately one-fifth of all current state revenues. MARTHA LUGINBUHL

Rudolf Virchow—Doctor, Statesman, Anthropologist—*By Erwin H. Ackerknecht. Madison, Wis.: University of Wisconsin Press,* 1953. 304 pp. Price, $5.00.

Most of the readers of this *Journal* will recall from the days when they studied biology, the name of Rudolf Virchow as the founder of the science of cellular pathology. The anthropologists, who play an important part in formulating public health programs for undeveloped areas, remember his contributions to the science of anthropology. Even more significant to most of us, however, was his leadership in the field of sanitation. Throughout his professional life, he emphasized the vital importance of sociological and economic factors in the causation of disease; and he was among the first to recognize the importance of the contagionistic factor in epidemic disease. As a member of the Prussian Parliament, from 1861 until his death in 1902, he led in the battle for sociological and sanitary reform. His major campaign for a sewerage system for the City of Berlin in the 1860's is an epic in the history of sanitation.

All these aspects are discussed by Dr. Ackerknecht in his account of the life of one of the greatest leaders of that liberal German thought that illumined the last quarter of the nineteenth century. C.-E. A. WINSLOW

Water Supply and Sewerage—*By Ernest W. Steel (3rd. ed.). New York: McGraw-Hill,* 1953. 582 pp. Price, $8.00.

In reviewing the third edition of this volume, this reviewer is impressed with the thoroughness with which the author expresses himself. The first paragraph of the introduction is of great value, since it goes into a discussion of activities which are likely to be under local and state health departments, as well as in the field of consulting or design work. This brings together the importance of where the engineer fits in the field of environmental health and the field of diseases.

The manner in which this book is published is an asset to the engineers in this field, since it covers both water supply and sewerage. The material is sufficiently broad, not only in the matter of safeguarding health but in covering the broad fields of safety, and the esthetic and economic facets of the subject.

At the penalty of discussing some of

the matters briefly from a technical point, the material contained in this book has been obtained from excellent sources and any user of this book would be in a position to delve deeper into many of the technical aspects if he so desires, although it covers the majority of the technical features, as well as the practical application for each of the theories mentioned. Based on reading in the last year or so, it is quite up to date, probably more so than any book the writer has seen in recent years.

The diagrams, technical formulas, examples, and figures are quite clear and most useful. A reader or student of this book can find almost anything he desires. It is extremely useful in the field of public health as well as in the hands of a consulting engineer. In the opinion of this reviewer it can be easily said that "this is a book I should read."

DAVID B. LEE

Industrial Waste Treatment—*By Edmund B. Besselievre. New York: McGraw-Hill,* 1953. 391 pp. Price, $7.50.

Mr. Besselievre has drawn from a rich sanitary engineering experience to provide under a single cover much valuable information on the industrial waste problem. The background information is well selected and presented in explanation for the need of control of industrial pollution. The advice given industrialists on steps to be taken is sound. His book contains many valuable discussions. It is excellent in its technical and equipment selection phases, but in its regulatory and industrial attitude phases some weaknesses appear. The problem is treated as a matter to be handled with the several public health authorities. Further, higher cost treatment plants are recommended where they cause lower total treatment costs.

These positions, while logical, are not entirely in accordance with the facts one encounters in industrial waste work. The trend today is to place industrial pollution control under special citizen's regulatory bodies with health authorities having authoritative voices only in the actual health hazards involved. On waste treatment construction management will keep capital investments to a minimum, although this may mean higher total costs. This is because it prefers to use its available new capital to build revenue-producing facilities.

The technical and equipment chapters of this book comprise an extremely valuable source of detailed information for professional workers. The material is well arranged and, with a few exceptions, highly accurate. It is written in readable and practical terms. This book deserves a place in the library of professional stream pollution workers.

L. L. HEDGEPETH

Standard Methods of Clinical Chemistry—*Edited by Miriam Reiner. New York: Academic Press,* 1953. 141 pp. Price, $4.50.

The American Society of Clinical Chemists presents in this small volume recommended procedures for a number of the determinations most commonly performed in a laboratory of clinical chemistry. These procedures have been selected by the society as being the methods of choice after careful checking in the routine work of several laboratories.

Chapters are devoted to the chosen methods for amylase, bilirubin, calcium, carbon dioxide, chloride, cholesterol, creatinine, glucose, lipase, phosphatase, protein, albumin and globulin, prothrombin time, sodium and potassium, thymol turbidity, urea nitrogen, and uric acid.

Additional volumes in the series are contemplated, presenting other more specialized subjects and possible future modifications of the current methods.

EDMUND K. KLINE

Books Received

Listing in this column acknowledges the receipt of books and our appreciation to the senders. Space and the interests of readers will permit review of some, but not all, of the books listed.

ACUTE INFECTIOUS HEMORRHAGIC FEVERS AND MYCOTOXICOSES IN THE UNION OF SOVIET SOCIALIST REPUBLICS. D. Carleton Gajdusek—Walter Reed Army Medical Center. Washington, D. C.: Gov. Ptg. Office, 1953. 140 pp. Price, $.60.

ADVANCES IN VIRUS RESEARCH. Edited by M. A. Lauffer and Kenneth M. Smith. New York: Academic Press, 1953. 362 pp. Price, $8.00.

ATTITUDES TOWARD GIVING. F. Emerson Andrews. New York: Russell Sage Foundation, 1953. 145 pp. Price, $2.00.

BIOCHEMISTRY AND PHYSIOLOGY OF NUTRITION. Vols. I and II. Edited by Geoffrey H. Borne and George W. Kidder. New York: Academic Press, 1953. Vol. I, 569 pp. Price, $13.00; Vol. II, 641 pp. Price, $15.00.

CONQUEST OF PLAGUE, THE. L. Fabian Hirst. New York: Oxford University Press, 1953. 478 pp. Price, $11.00.

CHEMICAL METHODS IN INDUSTRIAL HYGIENE. F. H. Goldman and M. B. Jacobs. New York: Interscience Publishers, 1953. 274 pp. Price, $3.75.

DESIGN AND OPERATION OF SEPTIC TANKS. THIRD EUROPEAN SEMINARY FOR SANITARY ENGINEERS. WHO. New York: Columbia University Press, 1953. 124 pp. Price, $1.50.

DISPOSAL OF THE DEAD, THE. (English). C. J. Polson, R. P. Brittain, and T. K. Marshall. New York: Philosophical Library, 1953. 300 pp. Price, $7.50.

DOCTORS, PEOPLE, AND GOVERNMENT. James Howard Means. Boston: Little, Brown, 1953. 206 pp. Price, $3.75.

EXISTENTIAL PSYCHOANALYSIS. Jean-Paul Sartre. New York: Philosophical Library, 1953. 275 pp. Price, $5.75.

HANDBOOK ON FEDERAL GRANT-IN-AID PROGRAMS. New York: The American Parents Committee, 1953. 216 pp. Price, $1.50.

HEALTH YEARBOOK 1953. Oliver E. Byrd. Stanford, Calif.: Stanford University Press, 1953. 280 pp. Price, $3.50.

HOW TO BE A BOARD OR COMMITTEE MEMBER. Roy Sorenson. New York: Association Press, 1953. 64 pp. Price, $1.00.

LOS ANGELES COUNTY-WIDE CHEST X-RAY SURVEY OF 1950. A STATISTICAL ANALYSIS AND REVIEW, PRIMARILY OF TUBERCULOSIS FINDINGS. Godias J. Drolet. Los Angeles, Calif.: Tuberculosis Control Foundation, 1953. Unpaged.

MAINE AIR-BORNE POLLEN AND FUNGUS SPORE SURVEY. Fay Hyland, B. F. Graham, Jr., F. H. Steinmetz, and Martyn A. Vickers. Orono, Me.: University of Maine, 1953. 97 pp.

MAPS, REPRESENTING THE WORLD DISTRIBUTION OF RICKETTSIAL DISEASES-LOUSE-BORNE AND FLEA-BORNE TYPHUS. New York: American Geographical Society, 1953. Price, $1.25.

OFFICIAL HISTORY OF THE CANADIAN MEDICAL SERVICES 1939–1945, Vol. II. CLINICAL SUBJECTS. W. R. Feasby. Ottawa, Canada: Edmond Cloutier—Queen's Printer and Controller of Stationery, 1953. 537 pp. Price, $5.00.

ORTHOPEDIC NURSING. Carroll B. Larson and Marjorie Gould (3rd ed.). St. Louis, Mo.: Mosby, 1953. 687 pp. Price, $5.75.

PROFESSIONAL PREPARATION IN HEALTH, PHYSICAL EDUCATION, AND RECREATION. Raymond Albert Snyder and Harry Alexander Scott. New York: McGraw-Hill, 1953. 421 pp. Price, $5.50.

PSYCHOLOGY OF PERSONALITY, THE. Bernard Notcutt. New York: Philosophical Library, 1953. 250 pp. Price, $4.75.

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SYNOPSIS OF MEDICAL ENTOMOLOGY. V. E. Brown. Milwaukee, Wis.: V. E. Brown, 512 N. 13 St., 1953. 219 pp. Price, $4.50.

WONDERS OF MODERN MEDICINE. Steven M. Spencer. New York: McGraw-Hill, 1953. 276 pp. Price, $4.00.

WORLD POPULATION AND PRODUCTION. W. S. and E. S. Woytinsky. New York: Twentieth Century Fund, 1953. 1268 pp. Price, $12.00.

A Selected Public Health Bibliography with Annotations

They Like the Work—"More than 14,000 St. Louis citizens have discussed problems of mental health over the last four years with the help of volunteer discussion leaders who are citizens of St. Louis, too." Mostly this paper tells about the ways the professional personnel train the lay discussion leaders and what the latter think about their work. One wonders what mental health has that other phases of public health haven't, that it should be so successful in recruiting enthusiastic volunteer help.

BENNE, K. D. Finding Time for Citizenship. Adult Leadership 2, 5:1 (Oct.), 1953.

Thank Goodness for Vesicular Exanthema—Now that pigs are becoming sick from eating garbage, heating is being required in most states. Fortunately for us unimportant human beings, it takes more heat to kill the germs of vesicular exanthema than it does trichinae! In attempting to ease the job for pig raisers, a heating unit for garbage trucks was tried out—it didn't work as well as it seemed to promise, but some good ideas evolved from it. (You will be glad to know pigs like cooked garbage better!)

BEVIS, H. A., et al. Disinfecting Garbage in Truck Bodies by Direct Steam Injection. Pub. Health Rep. 68, 11:1065 (Nov.), 1953.

"Self-Help Must Be Educated"—Keynoting a WHO regional Seminar on Health Education, the spokesman for British health education said of his specialty, "it is not to give the impression that (it) is a cheap substitute for public health and social services, but that it is one of the most important tools in making them effective."

BURTON, J. Health Education. M. Officer 90, 16:189 (Oct. 17), 1953.

Return to Fundamentals Urged—Here is another reminder that the "basic six" are still essential parts of the community health administrative program—noncontroversial parts, incidentally—and that it is both needful and practical to involve "the people" in them.

CALVER, H. N. A Health Department Is Public. Modern San. 5, 10:24 (Oct.), 1953.

Cautious Cancer Campaigners—Two reports of cancer education ventures, entered upon with commendable British caution are endorsed editorially, though the editor of the periodical interjects, "the sinister fact that doctors and nurses are among the worst offenders in concealing (cancer) symptoms seems to blow the bottom out of the case for cancer education altogether."

EVANS, D. M. Cancer Education (and) DONALDSON, M. A Cancer Education Campaign. M. Officer 90, 17:199 (Oct. 24), 1953.

To Tell or Not to Tell—This is not quite public health but it has a bearing on one corner of it. A large and representative sampling of Philadelphia physicians were asked if they told cancer patients of their condition. Seventy per cent said, no, they never tell their patients, or hardly ever do. In view of the fact that so many laymen know something about cancer, the writers think the medical profession ought to re-examine these relationships.

FITTS, W. T., JR., and RAVDIN, I. S. What Philadelphia Physicians Tell Patients with Cancer. J.A.M.A. 10:901 (Nov. 1), 1953.

Big-Scale Preventive Medicine—Should you ever be called upon to manage the emergency immunization of a great many people, you will be glad you read, and saved, these two accounts of quickly set-up facilities to give gamma

globulin to all children in a large city and throughout three counties. You may be disappointed when you find no mention made of the results, but the detailed stories of two such formidable jobs are enough material for one reading, of—and by—themselves.

GILL, D. G. Gamma Globulin in a Poliomyelitis Outbreak, Montgomery, Alabama, 1953 (and) CAMERON, C. M. JR. Organizing Mass Gamma Globulin Clinics on Three North Carolina Counties. Pub. Health Rep. 68, 11: 1021, 1025 (Nov.), 1953.

About $75-Privies, et cetera—Thirty million Americans live in villages or on the country's five million farms. For them, investment in sanitary facilities is a dollars-and-cents matter and the decision is based on what tangible benefits may be expected from the precious sums spent. Comprehending these nice economic questions may come as a new experience to you—if you are city raised.

HOLLIS, M. D. Environmental Health in a Rural Economy. Pub. Health Rep. 68, 11:1107 (Nov.), 1953.

Expert Opinion—A sociologist offers this slogan: "If it isn't mental health, it isn't public health." He explains the reason mental health education (which bears a marked family resemblance to our present-day concepts of public health education) must be the basis for public health activities. This is an objective and a challenging proposal, coming as it does from a professional commentator outside the two fields.

JENSEN, H. E. Mental Health: A Local Public Health Responsibility. Ment. Hyg. 37, 4: 530 (Oct.), 1953.

More Health Education—European Variety—Three additional papers from the WHO seminar (see Purton, above) and a revealing "Summary and Commentary" on the entire conference, give a whole new perspective to health education as it is developing in Europe. "People hate being educated," the summarizer observes, "we don't mind being advised, because that gives us the sense of some liberty of action." Readers will come to the wholesome conclusion that health education is not strictly an American monopoly.

MACKINTOSH, J. M. WHO Conference. Health Ed. J. 11, 4:163 (Oct.), 1953.

But Not for Tyros—A task group reports on the application of molecular filter membranes to water bacteriology and recommends procedures—outlined in clear and practical detail—for water examination with these filter membranes. This would seem to be a definitive, "official" pronouncement—in case you are particularly interested.

MCKEE, J. E. et al. Technique of Bacteriological Examination of Water with Molecular Filter Membranes. J. Am. Water Works A. 45, 11:1196 (Nov.), 1953.

Old Motes and New Beams—This is well worth your reading, if only for the fun to be derived from a firsthand account of the way our professional betters reasoned and reacted a half-century ago. But if these reminiscences do no more than entertain you, then your bump of suspicion must be flat. We still need that firm detachment and skepticism that our scientific forebears seemed to have had in such short supply.

PLACAK, J. C. Treatment of Tuberculosis Fifty Years Ago. J.A.M.A. 152, 9:725 (Oct. 31), 1953.

Voice from the Past—"What was good enough for pappy is good enough for me." With this profound response, the pioneering (Fla.) county health unit staff were greeted when first they set out to persuade the back-country "crackers" to rid themselves of hookworms and malarial parasites. These quarter-century reminiscences have a strangely modern ring. A more straight-faced

and official history precedes this amusing chronicle.

SMITH, W. H. Y. Birth and Early Days of Florida's First County Health Unit (and) SOWDER, W. T. The Growth of Local Health Units in Florida. Pub. Health Rep. 68, 11: 1083, 1088 (Nov.), 1953.

Things They Do Better—"Food Waste Salvage" (English for "feeding garbage to pigs" in our language) was begun in Britain as a war economy measure. As the war seems to be about over, some what-to-do-now questions have arisen. Under wartime compulsion food wastes had to be boiled for one hour. Such strict requirements are a far cry, indeed, from our lack of concern for the trichinosis hazard.

STEVENS, J. et al. The Salvage and Utilization of Food Waste for Animal Feeding. J. Roy San. Inst. 73, 6:675 (Nov.), 1953.

The Old We Have Always with Us—Comments on the problems of aging in their economic, medical, institutional, and social service aspects are presented in turn by experienced specialists. The discussion is practical and eminently useful, though there appears to be little here that has not been said before at one meeting or another. This is another area in which "much talk" seems to be needed "before action" (quotes by courtesy of Woodrow Wilson).

TIBBITTS, C., et al. The National Significance of Aging (and two related papers). New York State J. Med. 53, 20:2363 (Oct. 15), 1953.

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J. Am. Water Works A. (Journal of the American Water Works Association), 521 Fifth Ave., New York, N. Y.

J. Roy. San. Inst. (Journal of the Royal Sanitary Institute), 90 Buckingham Palace Road, London S.W. 1, England

M. Officer (The Medical Officer), Chronicle House, 72/78 Fleet St., London E.C. 4, England

Ment. Hyg. (Mental Hygiene), National Association for Mental Health, Inc., 1790 Broadway, New York 19, N. Y.

Modern San. (Modern Sanitation), 855 Avenue of the Americas, New York 1, N. Y.

New York State J. Med. (New York State Journal of Medicine), 292 Madison Ave., New York 17, N. Y.

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Public Health in Foreign Periodicals

George Rosen, M.D., Ph.D., F.A.P.H.A.

NOTE: This is the first of several columns on recent German publications in public health. The next column will appear shortly.

Health Education in Germany

For many years Germany was in the forefront of the movement for health education of the public. The creation of the German Hygiene Museum at Dresden in 1911 was a milestone in the development of health education. However, political, economic, and scientific trends both within and outside Germany led to a loss of this position of leadership. The state of chaos in Germany at the end of World War II, and the division of the country made it necessary to begin completely anew.

In 1948, the German Health Museum (Deutsches Gesundheits-Museum) was organized at Köln as a center for health education in the Federal Republic (West Germany). Since its inception the museum has expanded its activities. Today it is a center for health education literature, for news and information concerning health matters, for training health workers, and for lectures aimed at the general public. Material recently received indicates the excellent quality of the museum's work in the production field. Among these materials are leaflets on home safety, worm infestation, and information for expectant parents; releases from the museum's press service; a brochure describing the museum; and a booklet entitled Wege zur Gesundheit. Ein Beitrag zur Geschichte der hygienischen Volksaufklärung (Paths to Health. A Contribution to the History of Public Health Education).[1] The address of the Museum is Ostheimer Strasse 200, Köln-Merheim, Germany.

Traffic safety is also receiving active attention. Safety education is the major task of the Bundesverkehrswacht (Federal Traffic Watch), an organization founded in 1950, with its seat in Bonn. It comprises essentially organizations concerned with traffic safety on the state (Länder) level, and works closely with official and private agencies. To further traffic safety, it issues a magazine for schools entitled Schulverkehrswacht (School Traffic Watch). In 1953, student traffic squads (Schüler-Lotsendienst) were organized on an extensive basis in the Federal Republic and in West Berlin. Two publications issued in 1953 are Die Bundesverkehrswacht, a report of its annual meeting, and Zur Verkehrssicherheit (On Traffic Safety), a compilation of talks on the problem of traffic safety education and of activities relating to this area.[2] The Federal Traffic Watch also prepares and distributes literature on traffic safety aimed at various types of drivers and pedestrians. Its address is Rheinweg 97, Bonn a. Rh.

The problem of educating the public for health by means of radio is discussed by Richter.[3] This author maintains that while mass health education invades the intimate sphere of the patient-physician relationship, it is a necessity today when the public is exposed to a variety of misinformation in health matters. The physician should take an active part in the enlightenment of the public. Popular publications on health matters by doctors can play an important role in this regard. The radio, according to Richter, has a special advantage. It permits the physician to speak to the listener on a person to person basis, and thus helps

to create an atmosphere approaching that prevailing in the doctor's office. The author broadcasts over RIAS in West Berlin, and has dealt with such subjects as preventive medicine, mental hygiene, first aid for poisoning, and accidents, dietetics, physiology of various organ systems, basic concepts of pathology (constitution, allergy, infection), and many other topics.

Problems of Infant Mortality

Despite considerable improvement, the problem of infant mortality remains a matter of concern to German public health workers. In 1952, Fleischer published a study of infant mortality based on the 22,954 births that occurred in the resident population of Essen from 1947 to 1949.[4] Among the factors considered were order of birth, age of mother, and place of birth (home or hospital). It was found that first children were the most favored group, the mortality increasing progressively with the order of birth. Infant mortality was lowest in the maternal age group 21–37 years. Furthermore, Fleischer found the the infant mortality rate was higher when the birth occurred at home. The causes of death were divided into four groups: developmental disorders (including prematurity, birth traumas and congenital defects); disorders of nutrition (including metabolic diseases); infectious diseases; and other diseases (including cases not treated by a physician). Developmental disorders accounted for the greatest proportion of deaths. Infectious diseases and nutritional disorders declined from 1947 to 1949 owing to employment of chemotherapy and improved environmental conditions. As a result, developmental disorders have taken on increasing significance, turning attention to the first month and first weeks of life. Fleischer calls attention to the unfavorable picture of illegitimate births, especially to the fact that they are overwhelmingly due to developmental disorders. In view of these findings the following measures are recommended: All normal births where the age of the mother is unfavorable, all illegitimate births (except for special favorable cases), and finally all multiple births should be hospitalized. All children born at home who have serious developmental disorders should be hospitalized in the course of the day. After the tenth day, all children born at home who are seriously ill should be hospitalized. Application of these measures has resulted in a decrease of infant mortality.

The same problem is considered by Müller as it affects all of West Germany.[5] After considering the factors involved, the following action program is offered. In areas with high infant mortality, all infant deaths must be investigated and the public must be made aware of the problem. Pregnant women should be urged to come as early as possible for prenatal care, and to bring their children to child health stations. Furthermore, an energetic program of community education for child and family welfare is needed to supplement government action. Improvement is needed in facilities and methods for handling of prematures. In many places, closer cooperation between obstetrician and pediatrician are needed. Social measures are needed to strengthen the family, and to enable young people to marry earlier. Finally, Müller points out that a most important method for combatting infant mortality is to have close supervision of the expectant mother throughout the entire pregnancy.

Dieckhoff[6] presents the picture of infant mortality as seen from East Germany. Essentially the problem is the same as that described by the authors cited above. Here there has also been some improvement since the immediate postwar years, due chiefly to successful

treatment of pneumonias and diarrheas.

The importance of good prenatal care for mother and child is emphasized by Schneweis.[7] Calling attention to the significant preventive aspects of such a program, he points out, for instance, that provision of proper nutrition for the pregnant woman would promote the health of the unborn child. Furthermore, guidance and education of the mother during pregnancy would prepare the way for immunization of the child, particularly with BCG.

School Health Problems

The need for a reorientation of school health care is discussed by Graser.[8] In his opinion, care of the school child is the vital center of preventive medicine. This requires, however, a reconstruction of the school health program in Germany both as to goal and organizational form. As part of this process, Graser emphasizes the need for examination of all children upon entering school, and then of children at the age of puberty. Between these two points, children should be handled on an individual basis with regard to special problems. In this connection the role of the school doctor, in particular as a practitioner of preventive medicine, is to be considered. Graser feels that part-time school doctors serve various masters; and that this is unsatisfactory if the goal is to develop a school health program in which the doctor will deal with health problems in cooperation with the teacher and the family.

Problems of schooling for children with defective vision are discussed by Friemann for West Germany[9] and by Schmöger for East Germany.[10] Both authors are concerned with children whose vision is in the range from $\frac{20}{70}$ to $\frac{20}{200}$. Friemann points out that in 1951 there were special schools (Sehschwachenschulen) for such children in three cities—Essen, Hamburg, and Stuttgart. According to Schmöger, East Germany had two schools, in Leipzig and Berlin. There is agreement that facilities for these children are totally inadequate. Emphasis is placed on the fact that these children need a type of training which differs from that given to blind children. Among the indications for such special schooling, Friemann mentions high myopia (8 diopters and over), and chronic or repeated inflammation of the cornea or uveal tract. In Hamburg the child is assigned to the special school after examination by an ophthalmologist and after consultation with the school authorities. In cases where there is a question of mental retardation the child is also examined by a psychiatrist. The Hamburg school had 109 children in 1951, of whom 24 lived in the institution. Friemann lays great stress on the need for trained teachers in this field as well as on the need for facilities and personnel to deal with the needs of such children in smaller cities and rural areas. According to Schmöger, the problem should be handled along the following lines: (1) As many children as possible should remain in regular schools under periodic (annual) supervision of the school physician and the teacher. Special attention should be given to children first entering school, or even earlier where this is possible. (2) In smaller cities children with visual defects should be put in special classes if there is no special school. (3) Large cities should establish special schools. It is estimated that about 1 per cent of the school children will need such special facilities. It will probably be necessary to have one such school in each state. (4) Schools for the blind should have a special department for children with such a high degree of visual defect that they find

it difficult to learn to read and write and who might better learn some occupation suited to the blind. (5) There should be regular annual examination of the children to evaluate and develop any possibility of visual improvement. (6) As far as possible, the children should be treated individually and not in any schematic fashion. (7) All possible visual aids should be employed. (8) Finally, Schmöger warns against any exaggerated optimism concerning visual improvement, and suggests that the term "sight conservation" be avoided.

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The Public Health Awards

In shaping a physically healthier world the labors of those who work in the field of preventive medicine and positive health are often overshadowed by the more spectacular achievements of those who make new discoveries in medicine. This disparity of recognition is to be partially rectified this week when the American Public Health Association honors six scientists, five with the Lasker Awards donated by the Albert and Mary Lasker Foundation and one with the association's highest award, the Sedgwick Memorial Medal. One of the six, the winner of the Sedgwick Medal, is identified with no scientific discovery, no particular laboratory, and not even a particular community.

He is Dr. Carl E. Buck, professor of public health practice at the University of Michigan School of Public Health and former field director of the association. In his forty years' work in public health, Dr. Buck labored fruitfully in nearly every state of the Union and most of the provinces of Canada. His laboratory was the whole community, and few men have done as much as he to influence for the better the public health practices of a whole nation.

The Lasker Awards go to Dr. Felix J. Underwood, State Health Officer of Mississippi; Dr. Hans A. Krebs, professor of biochemistry at the University of Sheffield, England; Dr. Michael Heidelberger, professor of immunochemistry at Columbia University's College of Physicians and Surgeons; Dr. George Wald, professor of biology at Harvard University, and the late Professor Earle B. Phelps, research engineer at the University of Florida, who receives a posthumous award. Each of these men is being honored for work in widely diverse branches of science, yet all have contributed to a common cause—to make the world a safer, healthier and better place to live in.—Editorial, New York Herald Tribune, November 9, 1953

The Lasker Awards for 1953

Nineteen hundred and fifty-three marks the eighth annual presentation of Lasker Awards by the American Public Health Association. The Lasker Awards are given by the Albert and Mary Lasker Foundation to individuals and groups for outstanding contributions in research related to diseases which are the main causes of death and disability, and for distinguished service in the field of public health administration.

The Awards were conceived not only to honor the recipients and dramatize their accomplishments, but also to arouse increased professional and public interest in medical research and public health administration and to aid in the rapid dissemination of vital new health information to the peoples of the earth.

In the seven years since their founding, the Lasker Awards of the American Public Health Association have come to be regarded among the nation's primary medical honors. Seven of the winners have received Nobel Prizes.

The following citations were presented to the recipients at the Second General Session of the Association's Annual Meeting in New York City on November 12, 1953. Each recipient received a statuette of the Winged Victory, together with a beautiful leather-bound and illuminated citation. Individual winners received checks for $1,000.

Frank G. Boudreau, M.D., was chairman of the Awards Committee. The citations were presented by Roy J. Morton, C.E., chairman, Executive Board, American Public Health Association, as follows:

Felix J. Underwood, M.D.

For more than three decades Felix Underwood has demonstrated how a state health official can soundly build an expanding health service for the people of a state. Under his aegis Mississippi has extended the concept of public health from the control of epidemics to a modern concept embracing the promotion of health as well as the prevention of disease.

As an administrator, Dr. Underwood sought and received help from the medical profession, health workers of all kinds, political leaders, private foundations, and private citizens to produce a steady stream of accomplishments — county health units, child guidance clinics, supervision and training of midwives, unique programs for rural medical education, a new state medical school, a model hospital and health center survey and construction program, broad health education, mental health and service programs for workers and children, including education for responsible parenthood, and activities designed to control cancer and heart disease.

Many of these developments have influenced practice ouside Dr. Underwood's native state, even as he individually has influenced health work elsewhere. It is because of this excellent and long sustained pattern of activity in public health

administration that the American Public Health Association is honored to give this Lasker award.

In such work resides the essence of sound public health administration to which this Association is dedicated.

Prof. Earle Bernard Phelps
1876–1953

Earl Bernard Phelps (1876–1953), born in Galesburg, Ill., professionally trained at the Massachusetts Institute of Technology, a dedicated student of William T. Sedgwick, gave a lifetime in exploring, discovering, teaching and applying natural sciences to save mankind from the hazards of biological, physical and chemical factors of environment. A gifted teacher, he shared generously his wealth of knowledge and experience with a multitude of associates and students.

He was bacteriologist with the Massachusetts State Department of Health at the Lawrence Experiment Station for four years. He was for fifteen years in the Sanitary Research Laboratory at his Alma Mater, the last five of these as Associate Professor. He was for five years with the U. S. Geologic Survey, and at the Hygienic Laboratory of the U. S. Public Health Service for six years.

Then he became Professor of Sanitary Science at Columbia University for eighteen years until his retirement in 1943, after which he was Research Engineer at the University of Florida at Gainesville until his death. His major contributions to the science and practice of public health were in water chlorination, stream pollution indices, sewage treatment and disposal, aerial sanitation, milk pasteurization and reconstruction, and shellfish control.

His Public Health Engineering volume is an educational classic. Charming modesty marked Earle Phelps' life of distinction.

Michael Heidelberger, Ph.D.

Rarely does it happen that one man working in a science which borders upon many related fields is able to make contributions so decisive as to permit all of these fields to advance more rapidly.

Trained as an organic chemist, his earlier years were devoted to elucidating relationships between chemical structure and specificity in the fashioning of chemotherapeutic agents. Becoming interested in the type specificity of pneumococci, his discovery with Dr. Oswald T. Avery of the pneumococcal polysaccharides placed in his hands the tool par excellence for the study of immunological specificity and led him to the development of quantitative methods for the measurement of antigens, antibodies and complement and to a quantitative theory of their interaction.

These methods established the new subscience of immunochemistry upon the firm foundations of analytical chemistry, and made possible the measurement of traces of proteins and carbohydrates with an accuracy and specificity not obtainable by any other method. Their extensive development under his leadership and inspiration has made them indispensable in protein and carbohydrate chemistry to which they provide unique criteria of homogeneity and purity and make possible the perception of otherwise inapparent structural similarities and differences. They have been and continue to be decisive in the evaluation of the effectiveness of immunization procedures in man, in the elucidation of the mechanisms of allergic reactions, of the pathogenesis of a variety of diseases of unknown etiology and of the formation of antibody and other serum globulins.

The transformation of immunology from a largely descriptive science which applied bizarre names to odd properties of ill-defined or hypothetical substances—to immunochemistry, the precise and keen cutting tool by which many ragged edges in science have been planed away and intrinsic structure clearly revealed—that is the contribution of Michael Heidelberger.

Hans Adolf Krebs, M.D.

The outstanding scientific career of Hans Adolf Krebs, Doctor of Medicine, Fellow of the Royal Society and presently Professor of Biochemistry in the University of Sheffield, has been marked by his ability to systematize masses of knowledge according to simple principles.

His first success in this direction was his solution of the problem of urea synthesis in the living cell. Despite the numerous researches on the mechanism of the biosynthesis of urea, it remained for Krebs, in 1932, to propose and prove that urea is formed by a cyclic process. This work was of great importance not only because of the problem it solved but also because of the originality and elegance of the solution.

In 1938 Krebs developed the concept of another cyclic process to explain the mode of aerobic oxidation of the major dietary constituents. With the development of this concept, known throughout the scientific world as the Krebs citric acid cycle, innumerable isolated and apparently unrelated observations on intermediary metabolism were brought into an understandable pattern and order was brought out of chaos.

The originality of ideas advanced by Professor Krebs as well as his fruitful research have opened new vistas and paved the way for the solution of fundamental problems of cellular metabolism and for the understanding of disease.

Following his designation for the 1953 Lasker Award, Dr. Hans Adolf Krebs has been chosen to share this year's Nobel Prize for Medicine and Physiology.

George Wald, Ph.D.

Whenever scientists review their understanding of the physiology of vision or of the functional role of vitamin A, the contributions of George Wald have a prominent place.

His explorations had an auspicious beginning. Basic training at New York University and Columbia University was followed by a National Research Council fellowship for advanced study in Berlin, Heidelberg, Zurich and Chicago. Since 1934 he has been a member of the faculty at Harvard University, in the Department of Biology.

Although Dr. Wald's research papers have been singularly related to one specific field of investigation—the chemistry of vision, the range of his interest has not been narrow. Rather, it has had a delightful penetration into comparative biochemistry, evolution, ecology, the essentials of good teaching and a keen appreciation of the art of living on a high plane.

His discoveries have been especially valuable in identifying specific reversible reactions within the eye in response to light. Visual purple and other compounds were thus related to vitamins A_1 and A_2, and these in turn were associated with the early sea or fresh water environment of the organism.

He has given mankind a new picture of one of the most treasured gifts of life—the capacity to see.

Ernest Allen, Director
Division of Research Grants,
National Institutes of Health

Our nation has demonstrated remarkable ability in applying new knowledge for the advancement of health. An increased awareness of the value of medical research has resulted from the brilliant scientific contributions of recent years. Without belittling the value of applied knowledge, greatest progress comes from "basic" or "fundamental" knowledge. Many factors influence the rate at which such advances occur. The ability, integrity, and imagination of scientists with favorable research opportunities play an important fostering role. Freedom to determine fruitful areas for investigation and factors of timeliness, irrespective of urgency and desirability of solving recognized problems, must remain the responsibility of scientists themselves. Many have considered it impossible for government to support medical research without disadvantageous restrictions, controls, and limitations. Outstanding success by a governmental agency in conducting a large research grants program becomes a noteworthy achievement.

Since 1946, the Division of Research Grants has shared in the administration of expending over one hundred million dollars for research support, including over

seven thousand projects and one thousand fellowships. Using democratic methods and continuously exploring means for improving administrative procedures and policies, the division has fostered an extraordinary degree of scientific freedom. This brilliant administrative achievement is of measurable value to public health.

Edwin J. Cohn, Ph.D., 1892–1953
Director, University Laboratory of Physical Chemistry Related to Medicine and Public Health, Harvard University

For more than thirty years, Dr. Edwin Joseph Cohn and his associates have made brilliant observations on amino acids, peptides, and proteins. These include fundamental contributions on the isolation, characterization, chemical differentiation, and biological functions of these substances.

Exceptionally meritorious has been the fractionation of human blood plasma into constituent purified substances of preventive and therapeutic value. These researches have already produced biological preparations extensively used to alleviate suffering and disease: albumin for combating shock; isohemagglutinins for blood grouping; fibrinogen and thrombin for hemostasis; gamma globulin for passive immunization against epidemic disease.

Using new chemistries and biomechanical equipment, these scientists have been able for the first time to separate blood and other biological materials into constituent formed elements and chemical substances in a closed system and a continuous process. Using methods closely approximating chemical interactions used by nature in the process of continuous differentiation to meet complex and changing function and equilibrium needs of biological systems, new vistas are opened for the preparation, study, and utilization of biological substances.

New concepts of the fine structure of proteins are now being formulated and hypotheses experimentally tested.

These contributions are of untold benefit to man and form an important component of an emerging natural philosophy.

Association News

Forty-Year Memberships

At the Eighty-first Annual Meeting, eight Fellows, all but one a Charter Fellow, and three members of the Association were honored with 40-year membership certificates, including permanent remission of membership dues. The presentation was made at the Governing Council luncheon on November 9. The 11 represent a rather broad cross-section of public health—engineering, laboratory, industrial hygiene, public health administration, health education, and education, as well as private medical practice. Four are Charter Fellows of the Laboratory Section.

Of the 11, two are still active—Myrtle Greenfield, director of the New Mexico State Health Department Laboratory and currently vice-chairman of APHA's Laboratory Section of which she is a Charter Fellow. Frank J. Osborne, a Charter Fellow of the Health Officers Section, has been health officer of East Orange, N. J., during practically his entire public health life. He was a student of William Thompson Sedgwick at the Massachusetts Institute of Technology. A third recipient, Donald B. Armstrong, M.D., is just retiring as second vice-president of the Metropolitan Life Insurance Company in charge of health and welfare after serving in the Welfare Division for more than 25 years. As a Charter Fellow of the Public Health Education Section, he has held numerous offices in the Association, including nine years as an elective member of the Governing Council.

Others are:

Mark F. Boyd, M.D., Charter Fellow of the Laboratory Section. Now retired, Dr. Boyd, a malariologist, was formerly with the Rockefeller Institute engaged in malaria research. Early in his retirement, he was a member of the Florida State Board of Health.

Henry W. Furniss, M.D., retired practicing physician, now living in Bristol, Conn.

Emery R. Hayhurst, M.D., Charter Fellow of the Industrial Hygiene Section and former member both of the Governing Council and the Executive Board. Now retired, Dr. Hayhurst was at one time industrial hygienist with the Ohio State Health Department and later an industrial hygiene consultant in Columbus.

William C. Hoad, Charter Fellow of the Engineering Section, is professor emeritus of engineering, University of Michigan.

Robert N. Hoyt, Dr.P.H., Charter Fellow of the Laboratory Section, was at one time secretary of the Social Hygiene Committee of the Cleveland Health Council, as well as a teacher in the Western Reserve University School of Medicine and later coordinator of venereal disease control in the Cleveland Health Department.

William H. Marcussen, a Charter Fellow of the Laboratory Section was at one time dairy specialist of the Lederle Laboratories and as a specialist on quality control was a consultant to numerous local, state, and federal agencies. At the time of his retirement he was vice-president of the Borden Company, New York City.

William H. Price, M.D., practicing physician, Detroit, Mich.

Edward C. Schneider, Ph.D., member of the Laboratory Section, is now emeritus professor of biology, Wesleyan University, Middletown, Conn. As a teacher of biology there and in Colorado College, he was recognized for exceptional preparation of premedical students. He urged such students to familiarize themselves with the program of the APHA.

In the 18 years since this practice was started, a total of 110 members, 4 of whom were women, have received 40-year membership certificates.

Recent Meetings, State Affiliates

The Association has 32 affiliated state societies in 29 states and Puerto Rico, one in Cuba and two branches. In addition, there are known to be 10 additional state and one each of territorial and regional associations not

affiliated. There is also the U. S.-Mexico Border Association in which are associated the four states bordering on Mexico.

The total membership of the 33 affiliated state and territorial societies is 15,000, of which about one-third are members of the APHA.

The state societies each have an annual meeting. Spring meetings are the most common with 21 of the societies meeting in April, May, or June. Nine societies meet in one of the last four months of the year, two meet in February, and one in August. The two branches meet in the spring.

Eleven of the affiliates have met in recent months. Among the topics discussed were the respective roles of the medical social worker and the public health nurse in a local health department, in the Southern California association. The South Carolina and Colorado associations each devoted an afternoon panel to a Home Accident Prevention Program, the latter concluding with "Meet Dulcimer,"a home accident sound film strip. The Florida association initiated "curbstone conferences," in which 55 persons in 11 panels were prepared to discuss informally and answer questions on a variety of subjects according to the interests of conference participants. The New York State group made plans for one-day health conferences in two different areas of the state in 1954.

The Oklahoma association initiated an annual public health award by honoring Henry J. Darcey who has been the state health department sanitary engineer for a quarter of a century. Among the topics discussed were the integration of medical and public health services and comprehensive medicine in relation to public health.

The Pennsylvania association presented its annual award of a plaque to Preston A. Frost, serving his fifth term in the legislature and chairman of the House Committee on Public Health and Sanitation, in recognition of his courageous efforts in securing merit system and county health unit legislation and in appropriating the funds to carry out this legislation.

The dates of the recent state meetings, approximate attendance, and newly elected officers, where known, are:

Colorado—September 10–11

President—Graydon Dorsch, executive secretary, Denver Tuberculosis Society
President-Elect—John Brown, director of sanitation, Colorado Springs—El Paso County Health Department
Vice-President—Robert Anderson, D.V.M., public health veterinarian, Department of Health and Hospitals, Denver
Secretary—Arguyle Seikel, executive secretary, Colorado Heart Association, Denver
Treasurer—Helen Mason, medical social consultant, State Department of Public Health, Denver

Florida — October 22–24, Twenty-fifth Annual Meeting, 475 attending

President—Frank M. Hall, M.D., director, State Board of Health Training Center, Gainesville
Vice-Presidents—Enid Mathison, state nursing consultant, State Board of Health, Jacksonville
Zollie Maynard, Tallahassee
Secretary—Fred B. Ragland, director, Bureau of Finance and Accounts, State Board of Health, Jacksonville
Treasurer—Elsie Hyatt, administrative assistant, Bureau of Vital Statistics, State Board of Health, Jacksonville
Delegate to the APHA Governing Council—Wilson T. Sowder, M.D., state health officer, State Board of Health, Jacksonville

Minnesota—September 24–25, Seventh Annual Meeting

President—Allan Stone, executive director, Minnesota Division, American Cancer Society, St. Paul
Vice-Presidents—S. A. Whitson, M.D. Albert Lea
Edith E. Johnson, administrative assistant, Minneapolis Health Department
Treasurer—Steward C. Thomson, M.D., assistant director, School of Public Health, University of Minnesota

Executive Secretary—Dean S. Fleming, M.D., director, Division of Preventable Diseases, State Department of Health, Minneapolis

New York State—June 1–4, Fourth Annual Meeting

President—Edward C. LaValley, director of environmental sanitation, Tompkins County Health Department, Ithaca
President-Elect—Wendell R. Ames, M.D., deputy commissioner, Buffalo-Erie County Health Department
Vice-Presidents—Lillian J. Johnston, R.N., regional public health nurse, New York State Health Department, White Plains
Robert W. Osborn, Community Service Society, New York City
Secretary—Elmer J. Anderson, director, Office of Health Education, Buffalo-Erie County Health Department
Treasurer—Marion L. Henry, assistant director of accounts, State Department of Health, Albany

North Carolina—September 10–12, Forty-second Annual Meeting

President—E. H. Ellinwood, M.D., Guilford County health officer, Greensboro
Vice-President—Louise Y. Workman, vital statistician, Charlotte Health Department
Secretary-Treasurer—Doris Tillery, records and procedure analyst, State Board of Health, Raleigh

North Dakota — October 26–27, Tenth Annual Meeting

President—Lynn Byrne, Devils Lake
President-Elect—Arnold Goplen, Bismarck
Vice-President—Cecil Smith, M.D., Mandan
Secretary-Treasurer—Clemens Busch, Bismarck
Representative to the APHA Governing Council—Bernardine Cervinski, director, Division of Health Education, State Department of Health, Bismarck

Oklahoma — December 3–5, Thirteenth Annual Meeting, 300 attending

President—Margaret Chapman
Vice-President—Taylor Rogers
Secretary-Treasurer—Marjorie Butler

Each is on the staff of the State Health Department, Oklahoma City; Miss Chapman and Miss Butler as clerical consultants, Mr. Rogers as assistant director of the department's laboratory.

Pennsylvania—October 9

President—Mildred C. J. Pfeiffer, M.D., director, Division of Adult Cardiovascular Diseases, State Department of Health, Harrisburg
President-Elect—J. Thomas Millington, M.D., district medical director, Luzerne County, Wilkes-Barre
Vice-President—Merl G. Colvin, M.D., city health officer and Lycoming County medical director, Williamsport
Secretary-Treasurer—Robert H. Conn, consultant in health education, State Department of Health, Oil City

South Carolina — October 1–3, Thirtieth Annual Meeting

President—John M. Preston, M.D., director, Richland County Health Department, Columbia
President-Elect—W. T. Linton, director of water pollution control, State Board of Health, Columbia
Vice-President—Mrs. D. McL. McDonald, executive secretary, South Carolina Tuberculosis Association, Columbia
Secretary—Carrie B. DuPriest, Tuberculosis Control Section, State Board of Health, Columbia
Treasurer—Cecil Seigler, Section of Finance, State Board of Health, Columbia
Representative to the APHA Governing Council and Southern Branch, APHA—Ben F. Wyman, M.D., state health officer, Columbia

Southern California—November 1

President—Edward Lee Russell, M.D., health officer, Orange County Health Department, Santa Ana
President-Elect—L. S. Goerke, M.D., director, Medical Services, Los Angeles City Health Department
Vice-Presidents—Agnes O'Leary, assistant professor, Public Health Nursing, University of California, Los Angeles
A. Harry Bliss, chairman, School of Public Health, University of California, Los Angeles
Secretary-Treasurer—Gerald A. Heidbreder, M.D., chief, Division of VD Control, Los Angeles County Health Department

Washington — August, Eighteenth Annual Meeting

President—W. R. Giedt, M.D., head, Section of Epidemiology, State Department of Health, Seattle

President-Elect—Ralph Sachs, M.D., health officer, Hanford Works, General Electric Company, Richland
Vice-President—Elizabeth Massier, secretary, Tacoma Health Department
Treasurer—Edythe Tucker, health coordinator, Bremerton Public Schools
Secretary—Dorothy F. Smith, medical social consultant, State Department of Health, Seattle
Representative to the APHA Governing Council—John L. Jones, M.D., chief, Division of Preventive Medical Services, State Department of Health, Seattle

RESOLUTIONS

The following Resolutions were unanimously adopted by the Association at the Eighty-first Annual Meeting in New York, N. Y., November 11, 1953.

THANKS FOR SPECIAL PRIVILEGES EXTENDED

WHEREAS, the many opportunities to see at firsthand the scientific and industrial features of the New York City area have provided much of unusual interest and value to the participants at this Eighty-first Annual Meeting, therefore be it
RESOLVED, that the American Public Health Association expresses its sincere thanks to the agencies of New York City and its environs, and to those industrial organizations that have made their services and facilities available for the special benefit of members.

APPRECIATION TO OFFICIALS AND GROUPS

WHEREAS, the success of this Eighty-first Annual Meeting is due in large part to the many courtesies, generous contributions of time and energy, and efficiency in providing for and conducting this Meeting, as extended by John F. Mahoney, M.D., chairman of the New York Committee, and his colleagues on the committee, and
WHEREAS, invaluable time, energy and thought were contributed by individual members of the New York City Health Department and of the many voluntary agencies, and
WHEREAS, the Meeting was made more enjoyable for all those attending by the gracious hospitality shared with us, therefore be it
RESOLVED, that the American Public Health Association expresses its grateful appreciation and warm thanks to Dr. Mahoney, to the New York Committee and all of the organizations thereon represented, and to the New York City Health Department and voluntary agencies.

APPRECIATION TO THE PRESS, RADIO, AND TELEVISION NETWORKS

WHEREAS, the press, radio, and television networks, national, state, and local, have carried to the people of America the news of the important events of the Eighty-first Annual Meeting, thereby extending the value of the Meeting to those unable to attend, therefore be it
RESOLVED, that the American Public Health Association acknowledges its indebtedness and extends its thanks to the officials and staffs responsible for these means of mass information.

APPRECIATION TO EXHIBITORS

WHEREAS, the excellent exhibits, both scientific and technical, as presented at the Eighty-first Annual Meeting are of great value and interest to the public health profession, and
WHEREAS, the exhibits contribute so materially to the success of the Meeting, therefore be it
RESOLVED, that the American Public Health Association expresses its grateful appreciation to those responsible for these presentations.

IN MEMORIAM

WHEREAS, since the last Annual Meeting of the American Public Health Association it has suffered the irreparable loss of 88 Fellows and members, many of whom have made outstanding contributions to the success of the Association, therefore, be it
RESOLVED, that the Association expresses its deep regrets at this loss, and be it further
RESOLVED, that the names, attached, constitute a part of this resolution.

Deceased Members and Fellows October, 1952, to November, 1953

NAME	MEMBER	FELLOW
A. C. Bachmeyer, M.D., Loveland, Ohio	1916	
James W. Barkley, M.D., Belzoni, Miss.	1934	

NAME	MEMBER	FELLOW
Raymond J. Barrows, New York, N. Y.	1951	
Webster L. Benham, Oklahoma City, Okla.	1952	
Jose Penteado Bill, M.D., Dr.P.H., Wayland, Mass.	1919	
L. C. Billings, Dallas, Tex.	1928	
Mrs. Magnhild O. Bogue, Juneau, Alaska	1947	
Vergil F. Bradfield, Modesto, Calif.	1951	
Jacques Bronfenbrenner, Ph.D., Dr.P.H., Winston Salem, N. C.	1917	1922 charter
Abraham J. Brown, M.D., M.P.H., Philadelphia, Pa.	1944	
Alexander W. Burke, M.D., Galesburg, Ill.	1943	
Wyatt T. Burkett, M.D., Dotham, Ala.	1941	
Barnett Cohen, Baltimore, Md.	1916	1930
W. Graham Cole, New York, N. Y.	1950	
J. M. Coram, M.D., Beckley, W. Va.	1951	
E. H. Lewinski Corwin, Ph.D., New York, N. Y.	1914	1922 charter
Colonel Wesley C. Cox, M.C., Edgewood Arsenal, Md.	1936	1941
Frank G. Crandall, Jr., M.D., Los Angeles, Calif.	1925	1934
Mary T. Davenport, Dover, Del.	1946	
Arthur L. Dean, LL.D., Honolulu, T. Hawaii	1952	
Mary C. Dinsmore, Beverly, Mass.	1944	
Herbert G. Dyktor, Cleveland, Ohio	1936	1938
Harold Earnheart, M.D., Chicago, Ill.	1943	
Howard M. Engle, M.D., San Francisco, Calif.	1937	
Amos H. Englebeck, Akron, Ohio	1942	
N. Thomas Ennett, M.D., Beaufort, N. C.	1927	
Russell C. Evans, D.V.M., Racine, Wis.	1947	
W. Thurber Fales, Sc.D., Baltimore, Md.	1917	1925
Frank R. Ferlaino, M.D., New York, N. Y.	1943	
Henry C. Finch, M.D., M.P.H., Anadarko, Okla.	1951	
William B. Ganaposki, Farrell, Pa.	1948	
Eduardo Garrido-Morales, M.D., Dr.P.H., Santurce, Puerto Rico	1927	1930
Charles F. Good, M.D., Cleveland, Ohio	1940	1952
Henry L. Gowens, Jr., M.D., Philadelphia, Pa.	1950	
George F. Hadley, Pittsburgh, Pa.	1939	
Norman MacL. Harris, M.B., Ottawa, Ontario, Canada	1899	1922 charter
James A. Hayne, M.D., Congaree, Eastover, S. C.	1911	1923 charter
Oswald F. Hedley, M.D., Washington, D. C.	1943	
Joseph M. Hodges, Hutchinson, Kans.	1947	
Austin Hogan, M.D., Johnstown, N. Y.	1943	
C. R. Hostetter, Palmerton, Pa.	1950	
Charles H. Hurd, Fort Lauderdale, Fla.	1920	1922 charter
Raymond Hussey, M.D., M.A., Chicago, Ill.	1950	1952
Marie L. Johnson, R.N., New York, N. Y.	1938	1945
Clifford H. Jope, M.D., San Francisco, Calif.	1949	
Harold A. Kemp, Washington, D. C.	1942	
A. Judson Kemper, M.D., Clarksburg, W. Va.	1932	
Clyde C. Kennedy, San Francisco, Calif.	1927	1946
J. Alphonse Lapierre, M.D., D.P.H., St.-Jean, Quebec, Canada	1932	
Sheldon Lang, Great Neck, N. Y.	1948	
Harold W. Lyall, Ph.D., Albany, N. Y.	1910	1922 charter
Franklin J. Malone, M.D., Clarksville, Tenn.	1943	
W. H. McCastline, M.D., Brandon, Vt.	1915	
Albert S. McCown, M.D., Dr.P.H., Richmond, Va.	1935	1941
Arthur S. McQueen, M.D., Branford, Conn.	1950	
Guy S. Millberry, D.D.S., Los Gatos, Calif.	1919	1929
Edward L. Miloslavich, M.D., St. Louis, Mo.	1926	1932
Adolf Nichtenhauser, New York, N. Y.	1941	
James Nuckolls, D.D.S., San Francisco, Calif.	1946	
Sobey Okuyama, D.V.M., Genesee Depot, Wis.	1925	
Richard A. Petit, Huntington, W. Va.	1949	

NAME	MEMBER	FELLOW
Earle B. Phelps, Gainesville, Fla	1902	1922 charter
Ethel Phillips, R.N., Elmira, N. Y.	1936	
Charles Porter, M.D., London, England		1931 Honorary
C. L. Putnam, M.D., M.S.P.H., DesMoines, Iowa	1938	1945
Ellen D. Quinlan, R.N., Cincinnati, Ohio	1952	
Thurman B. Rice, M.D., Indianapolis, Ind.	1924	
Charles Rich, M.D., Yorktown Heights, N. Y.	1920	
Elsmere R. Rickard, M.D., M.P.H., Tampa, Fla.	1943	
Albert H. Rohner, Madison, N. J.	1948	
Myron P. Rudolph, M.D., Dr.P.H., Raleigh, N. C.	1941	1946
Florence R. Sabin, M.D., Denver, Colo.	1946	1947 Honorary
Dr. Rene Sand, Bruxelles, Belgium		1946 Honorary
Alcor A. Shanks, Nassawadox, Va.	1933	
John F. Skinner, Glendale, Calif.	1915	1922 charter
F. Michael Smith, M.D., Vicksburg, Miss.	1935	
Sidney Sommers, M.D., New York, N. Y.	1950	
Gertrude T. Spita, A.M., Brookline, Mass.	1922	
Nelson W. Strohm, M.D., Buffalo, N. Y.	1947	
Deed C. Thurman, Jr., Menard, Tex.	1949	
N. A. Towne, M.D., Naugatuck, Conn.	1947	
R. G. Tuck, M.D., Royal Oak, Mich.	1947	
Philip Van Ingen, M.D., New York, N. Y.	1914	1922 charter
Lyman H. Wheeler, M.D., Lockport, N. Y.	1941	
Robert G. White, M.D., Detroit, Mich.	1935	1941
F. Edward Whitehead, River Edge, N. J.	1928	1930
Joseph C. Willett, D.V.M., St. Louis, Mo.	1925	1931
Sidney I. Wolfson, M.S.P.H., West Chester, Pa.	1947	

PUBLIC HEALTH WORKERS AND SOCIAL SCIENTISTS

WHEREAS, the field of health education is concerned basically with human behavior, its nature and how it may be altered for the improvement and promotion of individual and community health, and

WHEREAS, the social sciences contribute to knowledge of human nature and behavior, therefore be it

RESOLVED, that the American Public Health Association encourage collaboration between public health workers and social scientists to better promote the utilization of social science findings toward the solution of public health problems.

HOME CARE OF THE SICK

WHEREAS, the proportionate increase in incidence of chronic disease has resulted in changing patterns of hospitalization and a change in the magnitude of the problem of home care of the sick, including public health nursing service, and

WHEREAS, the great majority of people now needing such home care are not receiving adequate service, therefore be it

RESOLVED, that the American Public Health Association encourage experimentation and objective evaluation of a wide variety of patterns for providing such home care of the sick.

STATE SUPPORT OF LOCAL HEALTH SERVICES

WHEREAS, the American Public Health Association has consistently favored the development of local health services as a requisite to safeguarding the health of the Nation, and has supported the adoption of legislation providing for adequate financial support of such local health units, and

WHEREAS, federal grants-in-aid for health purposes have very materially contributed to the development of more adequate public health programs in the various states, and

WHEREAS, in 1953 the federal government cut grants-in-aid from the Public Health Service to the states by an average of 25 per cent, and

WHEREAS, this reduction in funds seriously threatens the continued existence of the public health programs in many states, therefore be it

RESOLVED, that the states be urged to give increased support to the development and maintenance of adequate public health programs within their boundaries by providing state funds necessary to make this objective possible, and be it further

RESOLVED, that a copy of this resolution be

transmitted to the Governor of each state and territory of these United States.

FEDERAL GRANTS-IN-AID

WHEREAS, the American Public Health Association has consistently favored the development of local health services as a requisite to safeguarding the health of the Nation, and has supported the adoption of legislation providing for adequate financial support of such local health units, and

WHEREAS, in 1953 the federal government cut grants-in-aid from the Public Health Service to the states by an average of 25 per cent, and

WHEREAS, the President of the United States has established a Commission on Intergovernmental Relations charged with studying the problem of grants-in-aid to states, and which Commission was directed to submit its report and recommendations to Congress in 1954, therefore be it

RESOLVED, that federal grants-in-aid for health should continue so that the federal and state governments can meet their joint responsibilities for maintaining and improving the health of all the people, and be it further

RESOLVED, that there be no decrease in the amounts of the federal grants-in-aid for health until the Commission on Intergovernmental Relations has submitted its recommendations to Congress and until there has been ample opportunity for representatives of state health departments and national health organizations to submit data pertaining to the problem, and be it further

RESOLVED, that the Executive Board of the American Public Health Association be instructed to appear before appropriate groups in the Executive and Legislative Branches of the federal government, including the Commission on Intergovernmental Relations and the Commission on the Organization of the Executive Branch of Government, to express the views of the Association relating to continuation of federal grants-in-aid for health services, and be it further

RESOLVED, that copies of this resolution be sent to the Director of the Federal Budget, the Secretary of the Department of Health, Education and Welfare, each member of Congress and to other organizations in the public health field.

LOCAL SUPPORT OF PUBLIC HEALTH PROGRAMS

WHEREAS, the American Public Health Association has consistently favored the development of local health services as a requisite to safeguarding the health of the nation, and has supported the adoption of legislation providing for adequate financial support of such local health units, and

WHEREAS, federal grants-in-aid for health purposes have very materially contributed to the development of more adequate public health progress in the various states and local units of government, and

WHEREAS, in 1953 the federal government cut grants-in-aid from the Public Health Service to the states by an average of 25 per cent, and

WHEREAS, this reduction in funds seriously threatens the continued existence of the public health programs in many local health jurisdictions of the states, therefore be it

RESOLVED, that the local units of government in the states be urged to give increased support to the development and maintenance of adequate public health programs within their boundaries by providing local funds necessary to make this objective possible, and be it further

RESOLVED, that a copy of this resolution be transmitted to the United States Conference of Mayors and other appropriate bodies.

APHA membership application blank on page XXIX

Employment Service

The following pages present information for those seeking qualified public health personnel and for those seeking positions in public health.

This is a service of the Association conducted without expense to the employer or employee.

POSITIONS AVAILABLE

Medical Health Officer—for established county health department of 37,000 in northwestern Illinois. $7,200–$9,000, plus travel allowance. Qualified physician may start above minimum. President, Lee County Board of Health, 123 E. First Street, Dixon, Ill.

Medical Officer—with minimum of two years' general medical practice and working knowledge of public health medical services. $480–$640. City of Dallas, Civil Service Dept., 412 City Hall, Dallas, Tex.

Medical Health Officer—for established county health department of 32,000 in south central Illinois. $7,000–$9,000, plus travel allowance. C. H. Zoller, M.D., President, Board of Health, 403 N. Montgomery Ave., Litchfield, Ill.

Public Health Physician—for Division of Preventable Disease Control in County-City Health Department, population 285,000. Program consists of coordinating clinicians of special clinics, planning screening surveys, epidemiology, and some clinic work with venereal disease and well children. Requirement: M.P.H. or equivalent. $9,000–$9,600, depending on experience. C. R. Fargher, M.D., Director of Health, Tacoma-Pierce County Health Department 2324 Pacific Ave., Tacoma 2, Wash.

Physicians—with following specialties for Connecticut State Health Department—Local Health Consultant, $8,160–$10,680; Epidemiologist, Industrial Hygiene Physician, $7,320–$9,480; Crippled Children's Physician, Clinical Psychiatrist, $6,540–$8,340. Appointments above minimum based on qualifications. Glendon A. Scoboria, State Personnel Director, Room 405, State Office Bldg., Hartford, Conn.

Physician—California licensed, for health department tuberculosis clinic. Requirements: minimum of two years' experience in diagnosis and treatment, or both, of tuberculous patients; age limit 54. $713–$786. County Civil Service, 402 Civic Center, San Diego, Calif.

Health Commissioner—Tuscarawas County General Health District; population 62,000; $8,500. **Sanitarian**—Previous experience in general sanitation required. Open salary. President Tom Adams, Tuscarawas County Board of Health, 210 W. High Ave., New Philadelphia, Ohio.

Public Health Sanitarians—$4,422–$4,962. B.S. in sanitary science or civil engineering, or B.S. in an allied science, plus one year of field experience required. Civil Service Commission, County of Wayne, 2200 Cadillac Tower, Detroit 26, Mich.

Dental Hygienist—for city-county health department, to work with full-time dentist in school health program. $3,600. Director, Kalamazoo City-County Health Department, 241 W. S. Street, Kalamazoo, Mich.

Public Health Nurses—Three, immediately for generalized program in official agency in attractive and developing county one hour from New York. Cultural opportunities, both professional and personal, available. Thirty days annual sick leave. Vacations, 21 working days. Car allowance, eight cents a mile. $3,400–$4,000. Irvin F. Dillon, Chairman, Rockland County Public Health Committee, New City, N. Y.

Public Health Nurses—for Minneapolis Public School System. $3,125, plus added salary for acceptable preinduction experience up to five years not exceeding $500; maximum $4,325. Employment is for school year. B.S. degree minimum requirement. Personnel Office Minneapolis Public Schools, 807 Broadway, N.E., Minneapolis 13, Minn.

Public Health Nurse—Public health experience not essential but preferred. Inservice training, large city-county health unit. $3,500–$4,000. Immediate appointment. Director, Kalamazoo City-County Health Dept., 241 W. South Street, Kalamazoo, Mich.

Public Health Nurses—in generalized program $351–$384. Transportation furnished. Certificate in public health nursing required.

Nurses with unmet certificate credits may qualify through local university program while on the job. $325–$336. Gertrude Mulaney, R.N., Superintendent of Nurses, Milwaukee Health Dept., Milwaukee, Wis.

Physical Therapist—to work in a well organized cerebral palsy program in California. Salary dependent on qualifications. R. S. Westphal, M.D., Sonoma County Health Officer, 3325 Chanate Road, Santa Rosa, Calif.

Director of Public Health and Preventive Medicine—Denver (Colo.) Department of Health and Hospitals. Responsible administrative position in public health and medical care. Minimum requirements: M.D., eligible for license in Colorado; M.P.H.; and at least four years' experience in a responsible administrative capacity in public health. $8,400–$11,700. Submit statement of training and experience to: Personnel Office, Dept. of Health and Hospitals, West 6th Ave. and Cherokee St., Denver, Colo.

Public Health Physician—(Maternal and Child Health). $10,149–$10,749. Wayne County Health Department, Eloise, Mich., 16 miles west of downtown Detroit. Applicants must have completed one year's residence in the field of obstetrics and pediatrics, or both. Civil Service Commission, County of Wayne, 2200 Cadillac Tower, Detroit, Mich.

Director of Health—for Nebraska State Board of Health. M.D. and M.P.H. degree or approved equivalent experience or training in public health work required. Salary open. Chairman, State Board of Health, Room 1004, State Capitol, Lincoln, Neb.

Director of Dental Health—for Virginia State Health Department. To direct a statewide public health dental program. Must be a graduate of an approved dental school, Virginia license, or eligibility, therefor; at least three years' experience in public health dentistry with M.P.H. Two additional years' dental experience may be substituted for graduate study. $9,168. Director of Personnel, State Health Dept., Room 714 State Office Bldg., Richmond, Va.

Dental Hygienist—Santa Clara County Health Department; must have license to practice in California or be eligible for license. W. Elwyn Turner, Director of Public Health, 2220 Moorpark Ave., San Jose 23, Calif.

Sanitary Engineer—required immediately by the Health Department of the City of Ottawa, Canada. Permanent position. Hospital and medical insurance plans available. State qualifications, experience, and salary expected. Secretary, Board of Health, Transportation Bldg., Ottawa, Ontario.

Public Health Sanitarian—for special home accident prevention program. Requires a degree with a major in engineering or public health and four years in sanitation inspection work, two of which shall have been in a local health department. John M. Henninger, Merit System Supervisor, Kentucky State Dept. of Health, 620 S. 3rd St., Louisville, Ky.

Principal Bacteriologist—$5,913–$6,571. To supervise microbiological services of large municipal public health laboratory. Doctor's degree in biologic science, public health or medicine, and two years' experience in large public health laboratory, including one year in supervisory capacity required. Position under municipal civil service. Dept. of Personnel, City of St. Louis, 235 Municipal Courts Bldg., St. Louis 3, Mo.

Health Educator—(Male) for foreign service, to help plan and organize health education materials and programs in Saudi Arabia. Science degree, plus graduate work in public health and some practical experience in health education activities. Supply full personal and work experience particulars. Recruiting Supervisor, **Box HE,** Arabian American Oil Company, 505 Park Avenue, New York 22, N. Y.

Public Health Nurse—for generalized program in county of 270,000 population. $3,828–$4,740. Car furnished or 7½ cents a mile. Orange County Personnel Dept., 644 N. Broadway, Santa Ana, Calif.

Public Health Engineer I—$5,916–$7,430—B.S. in engineering plus three years' experience in environmental sanitation, including one year in a supervisory or administrative capacity.

Sanitarian III–Housing—$5,916–$7,430—B.S. in engineering, sanitary science, public health, or equivalent, and three years' experience in environmental sanitation, including one year in a supervisory or administrative capacity.

File by February 15, 1954. Personnel Department, Room 127, City Hall, Philadelphia, Pa.

POSITIONS WANTED

Bacteriologist—Ph.D. 1950 seeks position preferably in East. Experience in teaching, research, public health (medical microbiology), and sanitary bacteriology. At present, in position with administrative responsibilities. Write: **Box L-30,** Employment Service, APHA.

Biostatistician—Medical, health, and psychiatry. Set up projects and IBM systems and procedures included. Eight years' experience. Location incidental to position. Write: **Box ST-9,** Employment Service, APHA.

Sanitary Engineer—Eleven years' diversified sanitary engineering and research experience, M.S. degree, desires position in East. Write: **Box E-25,** Employment Service, APHA.

All communications on the following advertisements should be sent to Burneice Larson, Medical Bureau, Palmolive Building, Chicago 11, Ill.

OPPORTUNITIES AVAILABLE

WANTED: (a) Public health physician to serve as executive officer; state department of health; newly created post; headquarters, university medical center. (b) Public health nursing administrator, to head university department; rank: assistant professor; minimum, $6,000. (c) Assistant director, public health nursing; generalized program; Pacific Coast. (d) Health educator; city-county health department, South. (e) Sanitarian; county department serving population of 500,000. (f) Public health nurse, to serve as industrial health consultant, several companies. Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

OPPORTUNITIES WANTED

WANTED: (a) Public health physician; M.P.H.; Diplomate; nine years, director, city health department. (b) Public health nursing administrator; B.S. (Education); M.A. (Public Health Nursing); experience includes three years, associate professor, university department public health, six years, associate chief, state department public health nursing. (c) Bacteriologist; Ph.D.; six years, bacteriologist-immunologist, state health department. (d) Statistician; B.S., M.S., P.H., Dr.P.H. (Public Health Research, Statistics); eleven years, director, state department, vital and public health statistics. (e) Industrial hygienist; M.S.; eight years, chief, state department, and assistant professor public health, medical school. (f) Health educator; M.S., D.P.H.; five years, teaching; seven years, educator, state health department. Burneice Larson, Medical Bureau, Palmolive Building, Chicago.

News from the Field

WHO News

The World Wide Fellowships Program

In the six years of WHO's fellowships program 2,855 Fellows from 115 countries and territories received training in 79 countries and territories. The November issue of Chronicle of the World Health Organization summarizes the program for the period ending December 31, 1952. It defines a fellowship as "the acceptance by WHO of an individual, on the recommendation of his government, as a person who, given the opportunity to study abroad, will increasingly contribute towards furthering the objectives of his government and of WHO, i.e., the attainment by all peoples of the highest possible level of health."

Of the 2,855 Fellows, 72 per cent are physicians, 11 per cent nurses, and 6 per cent sanitarians. Men constitute 79 per cent of the total and two-thirds are under 45 years of age; 85 per cent study various aspects of public health and preventive medicine.

Moneys budgeted for the 1954 fellowship program total nearly $3,000,000, one-third of which is from WHO's regular budget.

Among the problems of the fellowship program mentioned are, first and foremost, proper selection of the candidate by the requesting government, study arrangements, and what happens when the candidate returns home.

As its conclusion, the article quotes Chester I. Barnard, past-president of the Rockefeller Foundation, in reference to the foundation's fellowship program.

> Fellowships are uncontrolled experiments in the sense that the kind of record that might have been established without the fellowship remains unknown. Since the aim initially is to choose outstanding individuals, it is safe to assume that many of these young persons would have had distinguished careers even without the help of a fellowship. It would therefore be wholly unwarranted to credit to the fellowship itself the proud record made by scores upon scores of Rockefeller Foundation fellows. Fellowship holders themselves affirm, however, that the fellowship experience, wisely planned and coming at a crucial developmental juncture, can contribute significantly to future achievement.

Occupational Health Seminar

A week's seminar on occupational health in Milan in late September of 1953 agreed that only one accident out of five is due to purely mechanical causes; in all others there is a human factor of boredom, inattention, fatigue, emotional, or other strain. Therefore mental health is considered increasingly important as an accident preventive. But psychological factors do not obviate the need for maximum security as to safety devices, lighting, ventilation, etc. Also under discussion were the different methods developed in various countries for providing good medical services in the small factory.

The seminar, organized jointly by WHO's Regional Office for Europe, the International Labor Organization, and the Italian government, was held in "Istituto Devoto," the oldest institute in the world devoted entirely to occupational health. Its director, Professor E. C. Vigliani, helped to organize the conference. In addition to lectures, discussion, and practical demonstrations, visits were made to the National Institute for the Prevention of Accidents and the Fiat and Olivetti factories in Turin and Ivrea where progressive industrial health services are being carried on. Sixty factory medical inspectors, research scientists, workers' and employers' representatives, and health and

social security administrators from eight European countries attended the seminar.

Among the recommendations made were more intensive exchange of information, more frequent international meetings, international agreements on safety and other regulations, and common definitions of terms used in occupational health literature in order to make statistics of various countries comparable. And that occupational health is concerned with more than accidents and occupational diseases was the unanimous agreement. "We are concerned with the total health and well-being of the worker."

Testing DDT Resistance of Insects

A WHO symposium met in Rome in October, considering chiefly the problem of resistance of insects to DDT. It concluded that while "the problem is serious, it is not disastrous. Resistance among the more important disease vectors is limited. . . . With the exception of the housefly and possibly three or four species of mosquitoes, chemicals are presently available that will control species which have shown resistance to DDT."

Among the recommendations made were the adoption of standardized tests for measuring resistance so that results in different countries can be compared. A simple, reliable method of measuring resistance should be established by WHO on the basis of information on present methods collected from all over the world.

Further recommendations were:

"Concentrated and on-the-target" attacks to achieve a maximum kill rather than widespread and indiscriminate use of insecticides.

Both laboratory experiments and the collection of detailed information from manufacturers to develop new chemicals not harmful to man.

The use of a different insecticide against larvae and adult insects to minimize the development of resistance.

It was reported that lindane was being successfully used against DDT-resistant body lice in Korea and against bedbugs. Malathon had been successfully used against dog and cat fleas in the field, as well as against chlordane-resistant roaches. It was agreed that DDT, chlordane, aldrin, and dieldrin had been extensively used without any record of acute or chronic poisoning of operators or the general public.

The conference, whose chairman was Professor P. A. Buxton of the London School of Hygiene and Tropical Medicine, was held jointly by WHO's Regional Office for Europe and the Istituto Superiore di Sanita of Rome. Representatives from the United States were Leigh E. Chadwick, chief of the Entomology Branch, Army Medical Center in Edgewood, Maryland, E. F. Knipling, of the Department of Agriculture's Bureau of Entomology and Plant Quarantine, and S. W. Simmons of the Communicable Disease Center in Atlanta.

African Regional Office

Two WHO meetings have recently been held in Kampala, Uganda. The first, which was the second session of the Expert Committee on Yellow Fever, met for a week beginning in September. A proposal to extend the accepted period of immunity following vaccination against yellow fever from six to nine years was unanimously approved. An extension of the recognized endemic yellow fever areas in Africa was also recommended. F. L. Soper, M.D., director, and J. Eoshell, M.D., staff member of the Pan American Sanitary Bureau, served as consultants to the committee's meeting.

Immediately following, the third session of the Regional Committee for Africa met. A 1955 budget of nearly a million dollars was recommended, approximately the sum approved for 1954 by the WHO Assembly. A number of

intercountry programs, including support to the Malaria Institute in Tanganyika, a malaria and a health statistics conference, and an international yaws control symposium were recommended. The fourth session will be held the third week of September, 1954, in Leopoldville, Belgian Congo. The 1955 session will be held in Tananarive, Madagascar.

Meeting of State Health Officers

The annual Conference of the State and Territorial Health Officers with the Public Health Service and the Children's Bureau was held for four days in Washington just prior to the 81st Annual Meeting of the American Public Health Association. Harold M. Erickson, M.D., health officer of Oregon, was elected president and Franklin D. Yoder, M.D., health officer of Wyoming, secretary-treasurer.

Both Under-Secretary Nelson A. Rockefeller and Special Assistant for Health and Medical Affairs, Chester M. Keefer, M.D., briefed the state officials on the government's public health policy. With respect to state grants, Mr. Rockefeller said, "Let me state that grants to health activities will continue. . . . I am confident that there are many untapped resources and undevised methods for the provision of better health services. I am hopeful that in your work together here this week you may discover the key to some of them."

Dr. Keefer proposed that an all out attack against chronic illness be initiated by a series of surveys to determine the extent of the problem. In addition, he advised research and pilot demonstrations on early case finding, precise diagnosis, medical treatment, and rehabilitation. He was unable to indicate the extent of federal financial participation in such an attack. Detailed progress reports of the year's activities were presented both by Surgeon General Leonard A. Scheele and Martha M. Eliot, M.D., chief of the Children's Bureau.

Among the recommendations passed by the state health officers was one urging that the present federal grants-in-aid for state and local health programs be held intact until the Commission on Intergovernmental Relations has completed its study and made its report.

Also recommended was the initiation of a peri-natal mortality study, "perinatal period" being tentatively defined as the period beginning with the 29th week of gestation through the first week of independent life. The Council of State Governments was urged to follow up its study of research and training in prevention and cure of mental illness with a critical appraisal of the mental health programs of the 48 states and a further recommendation that mental health programs be closely integrated with existing public health programs.

Other recommendations of the association include regional conferences on migratory workers for their better health protection and more uniformity of services; nutrition education programs in maternal-child health services, with particular reference to obesity, reciprocity among states on premarital blood test requirements, and routine chest x-ray of hospital admissions and staff. The association affirmed its previous stand that health services of the Bureau of Indian Affairs be transferred to the Public Health Service and specifically approved House Resolution 303 to that end.

The association's annual McCormack Award was presented to R. H. Riley, M.D., director of public health of Maryland, since 1928.

Hoover's Medical Task Force

A 16-man "medical task force" has been appointed as an advisory group to the Commission on Federal Government

Reorganization, headed by former President Herbert Hoover. The chairman is Chauncey McCormick and the dental representative is Otto W. Brandhorst, D.D.S., past-president of the American Dental Association. The remaining 14 members are physicians and include the following members or Fellows of the American Public Health Association:

Edwin L. Crosby, director, Joint Commission on Accreditation of Hospitals, who will also serve as research director for the medical task force

Alan Gregg, vice-president, Rockefeller Foundation

Paul R. Hawley, director, American College of Surgeons,

Hugh R. Leavell, president of the American Public Health Association and professor of public health practice, Harvard School of Public Health

Basil C. MacLean, director of Strong Memorial Hospital, Rochester, N. Y.

Others are:

Francis Braceland, Hartford, Conn.

E. D. Churchill, Boston, Mass.

Michael DeBakey, Houston, Tex.

Evarts A. Graham, St. Louis, Mo.

Theodore G. Klump, president, Winthrop-Stearns Company

Walter B. Martin, Norfolk, president-elect of the American Medical Association

James Roscoe Miller, president of Northwestern University

Dwight L. Wilbur, clinical professor of medicine, Stanford University School of Medicine

Milton C. Winternitz, former chairman, Medical Sciences Division, National Research Council

Latest Cardiac News for Doctors

The American and New Hampshire Heart Associations are cooperating in a pilot project in postgraduate medical education, the aim of which is to find "the most effective methods for informing general practitioners about the present state of knowledge in the cardiovascular field." In four different centers in New Hampshire visiting teams of medical experts are holding intensive sessions with local physicians. Lectures, panel discussions, films and other visual aids will be used in these sessions. Evaluation procedures to determine what have been the most effective methods of getting the information across to the doctors are an essential part of the plan.

This study plan was developed by the American Heart Association's Committee on Professional Education, whose chairman is J. Scott Butterworth, M.D., of New York University's Postgraduate Medical School. In 1953 he received the Billings Gold Medal of the American Medical Association for his exhibit on the cardiac silhouette, which will be used in the New Hampshire sessions.

Study of Tobacco and Cancer

The Veterans Administration and the U. S. Public Health Service will collaborate in a forthcoming study which it is hoped will settle the question of relationship between tobacco consumption and the incidence of lung cancer, according to the Washington Report on the Medical Sciences.

Harold F. Dorn, Ph.D., chief of the Biometrics Section, National Institutes of Health, Bethesda, Md., said that during coming months some 350,000 veterans, a majority of them age 55 and upward, will receive a questionnaire requesting information on smoking habits. It is anticipated that a quarter of a million questionnaires may be returned. Most of the veterans in this survey will be holders of government life insurance which will facilitate collection of statistical data on causes of death. The mortality expectancy of the survey group is about 5,000 a year. Within three to four years a clear picture should begin to emerge on the influence of tobacco as a possibly culpable agent. This survey is in addition to a mass survey of smoking as a factor in the incidence of lung cancer under way by the American Cancer Society.

Kimble Award to Hopkins Scientists

Two Johns Hopkins University bacteriologists have received the 1953 and second annual Kimble Glass Methodology Research Award. For developing a more accurate method of diagnosing syphilis and thus providing a new weapon in controlling spread of the disease, Robert A. Nelson, Jr., M.D., of the Department of Microbiology of the Johns Hopkins University School of Hygiene and Public Health and lecturer in medicine in the University's School of Medicine, and Manfred M. Mayer, Ph.D., associate professor of microbiology in the School of Hygiene and Public Health, received the award, consisting of $500 and an engraved silver plaque.

Presentation of the award was made by Dr. I. H. Borts, director of the Iowa State Hygienic Laboratory, at the annual banquet of the Conference of State and Provincial Public Health Laboratory Directors in New York City in connection with the 81st Annual Meeting of the American Public Health Association.

The Kimble Methodology Award is sponsored by the Kimble Glass Company, a subsidiary of the Owens-Illinois Glass Company of Toledo, Ohio. It was established to give public recognition and financial reward to an individual who has contributed outstandingly to developing a new or better method of procedure in the field of public health.

Foundation for Allergic Diseases

Following a 1952 fact-finding survey undertaken jointly by the American Academy of Allergy and the American College of Allergists, the new American Foundation for Allergic Diseases has been created as a national, voluntary, nonprofit organization. With headquarters at 525 Lexington Avenue, New York City, its president is Horace S. Baldwin, M.D., of New York. It has a 24-physician board of trustees including the officers.

The announced purpose of the foundation is to promote an accurate public understanding of the problems of allergic diseases, to inform the medical profession, to cooperate with hospital and other agencies in developing preventive and treatment facilities, and to finance research facilities in the field of allergic diseases. Eventual organization of local or regional branches as in the case of other national voluntary health agencies is planned.

Foreign Operations Administration

Through an amalgamation of the former Mutual Security Agency, the Technical Cooperation Administration, and the Institute of Inter-American Affairs, the Foreign Operations Administration of the United States government has been created. Among its divisions is one on health and sanitation, whose director is John J. Hanlon, M.D. He was formerly associate director of the Technical Cooperation Administration's health and sanitation staff in the Department of State.

The operating responsibilities are being carried out by three regional offices, the Latin American Section headed by C. L. Williams, Jr., M.D., and Nurse Officer Kathleen Logan; the Near East and Africa region by Lewis C. Robbins, M.D., and sanitary engineer, Vincent Lamoureux, and the Far East region by as yet an unnamed physician and sanitary engineer, Kaarlo Nasi.

AAMC Broadens Membership Base

The Association of American Medical Colleges changed its constitution at the 64th annual meeting in Atlantic City in October to provide for membership by individuals and organizations with an interest in medical education. Membership is now open to medical school

faculty members and others professionally linked to medical schools for a fee of $10 per year. Sustaining memberships, at $1,000 a year, may be held by interested organizations.

Manning Public Health Scholarships

A public health scholarship fund memorializing the late Ernest T. Manning, M.D., of Omaha has been established at the University of Nebraska. Income from the $4,000 fund will provide scholarships for undergraduate students in the university's College of Medicine who plan to specialize in the field of public health. Dr. Manning was assistant professor of pathology at the college from 1909 to 1920. He then served in the Omaha Public Health Department and later as public health officer of the Omaha city schools.

Howe Award to Dr. Wilson

In recognition of his long services to schools, the William A. Howe Award of the American School Health Association was presented to Charles C. Wilson, M.D., professor of education and public health, Yale University, New Haven, Conn., at the association's annual banquet on November 12 in New York City.

Pollen Diffusion Studies

The Engineering Research Institute of the University of Michigan, in association with the School of Public Health and the Department of Civil Engineering, is undertaking a program of research on the atmospheric diffusion and penetration into buildings of allergenic pollens and industrial contaminants. The project is being sponsored by the Geophysics Research Directorate of the Air Force Cambridge Research Center. E. Wendell Hewson, Ph.D., is the principal investigator, with Professors Earnest Boyce and Clarence J. Velz as advisers.

Clearinghouse for Disaster Studies

To meet the urgent need by official agencies for scientific information on disaster problems and the opportunity to foster basic scientific work in a variety of fields, the National Academy of Sciences, National Research Council, has set up a Committee on Disaster Studies under the council's Division of Anthropology and Psychology. Because of the increasing interest in disaster research, the many disciplines involved, and the great need for exchange of information in this field, the committee has established a Clearinghouse for Disaster Studies.

In order to make available a currently useful reference source, the Clearinghouse asks for reprints and reports, especially unpublished reports, on disaster studies, or related research, and requests communication with the investigators of any "in progress" studies.

C. M. Louttit is the chairman, Subcommittee on Clearinghouse, and offices are at 2101 Constitution Ave., Washington 25, D. C.

Sanitary Engineering Society Elects

The United States Section of the Inter-American Association of Sanitary Engineering has elected the following officers who were inducted at the annual meeting of the Section in New York City on November 9:

President—Col. Thomas P. Browne, export manager, The Permutit Company, New York, N. Y.

Vice-President—Earnest Boyce, chairman, Department of Civil Engineering, University of Michigan, Ann Arbor

Secretary-Treasurer—Francis B. Elder, engineering associate, American Public Health Association, New York, N. Y.

Directors: William A. Hockett, director of international operations, Wallace and Tiernan Company, Newark, N. J. (one-year term); George O. Pierce, Pan American Sanitary Bureau, Washington, D. C. (two-year term); Edward J. Cleary, immediate

past-president of the Section and executive director, Ohio River Valley Water Sanitation Commission, Cincinnati, Ohio (three-year term).

PERSONALS

MURRAY S. ACKER, M.D., D.P.H.,† has been appointed director, Research and Statistics Branch, Saskatchewan Department of Public Health, Regina, Canada.

ELIZABETH M. AGNEW has been named apprentice nutritionist, Bureau of Nutrition, New York State Health Department, Albany.

HAROLD S. BARRETT, M.D., M.P.H.,* chief of the department's Medical Services Section since January, 1951, has been made deputy commissioner, Connecticut State Health Department, Hartford, succeeding ALBERT S. GRAY, M.D.,* retired.

W. W. BAUER, M.D.,* editor, Today's Health and director, Bureau of Health Education, American Medical Association, received the 1953 Honor Award of the American Medical Writers' Association at its recent annual meeting in Springfield, Ill.

STANHOPE BAYNE-JONES, M.D.,* technical director of research, Medical Research and Development Board, Department of the Army, Washington, D. C., in ceremonies on September 28 was promoted to a so-called "super grade" GS-17, the first to achieve a position of this high stature in the history of the Army Medical Service.

RALPH G. BEACHLEY, M.D.,* director of public health, Arlington County, Va., was elected president of the Metropolitan-Washington Tuberculosis Conference at its annual fall meeting in October.

THOMAS J. BEARE, D.D.S., formerly in private practice in San Bruno, is now public health dentist, Division of Dental Health, California State Department of Public Health, San Francisco.

ERNEST JONES BECKNER, M.D., retired in November, 1953, as health officer of the Montgomery County, Ill., Health Department, after having served since September, 1947.

COL. THEODORE C. BEDWELL, JR., M.D., M.P.H.,† has been appointed chief of preventive medicine in the Office of the Air Force Surgeon General, Washington, D. C.

FRANK BROWN BERRY, M.D., professor of clinical surgery, Columbia University College of Physicians and Surgeons, has been made assistant secretary of defense, succeeding MELVIN CASBERG, M.D.

CHARLES DANIEL BOWDOIN, M.D., C.P.H.,* director of the Georgia State Health Department's Division of Venereal Disease Control, Atlanta, and consultant to the Public Health Service, received an honorary life membership in the American Social Hygiene Association at the recent meeting of the Georgia Social Hygiene Council.

THEODORE E. BOYD, M.D., since 1947 a member of the Research Department, has been appointed assistant director of research, National Foundation for Infantile Paralysis, New York, N. Y.

HELEN L. BURKE,* former executive director, Colorado Tuberculosis and Public Health Association, has become director of the Commission on Human Relations, City and County of Denver, Colo.

FLORENCE S. BURNS, former public relations consultant, Michigan State Nurses' Association, is now in charge of the field service activities of the Committee on Careers, National League for Nursing, succeeding RHODIA TAYLOR,† on a year's leave of absence as recruitment consultant with the nursing service, Veterans Administration.

JOHN HOWARD COLLINS, D.V.M., in the Food and Drug Administration since 1942, has been appointed veterinary medical director of the FDA, succeeding the late HENRY E. MOSKEY, D.V.M.

FLOYD S. DAFT, Ph.D.,† has been appointed director of the National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md., succeeding RUSSELL M. WILDER, M.D.,* resigned. Dr. Daft has been assistant director and chief of laboratory research since 1951 and a member of the staff since 1937.

JOSEPH O. DEAN, M.D.,* formerly associate chief of the Bureau of State Services, Public Health Service, has been named an assistant to the medical director of the Bureau of Indian Affairs, Department of the Interior, Washington, D. C.

HORACE DELIEN, M.D.,* has been assigned by the Public Health Service as director, Public Health Division, Mutual Security Agency, Manila, Philippines.

E. B. DIXON, formerly plant quarantine inspector, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, is now entomologist, Kentucky State Department of Health, Louisville.

GENE J. FRANCHI, D.D.S., M.P.H.,† has been appointed director, Lawrence-Wabash Counties Health Department with headquarters in Lawrenceville, Ill.

RUTH J. FRANTZ, R.N., M.P.H.,* former health coordinator, Northern Illinois State Teachers College, is now associate in school

* Fellow.
† Member.

nursing, New York State Education Department, Albany.

HOLLAND HUDSON,† director of the Rehabilitation Division, National Tuberculosis Association, for the past 15 years, has become executive secretary of the Tuberculosis and Health Association, Territory of Hawaii.

MYRON W. HUSBAND, M.D.,* health officer of the Humboldt-Del Norte Health Department, Calif., has resigned to become Monterey County health officer. He succeeds KENNETH SHERIFF, M.D., resigned to enter private practice in Santa Clara County. JOHN A. CARSWELL, M.D.,* former deputy commissioner of health, Territory of Alaska, is now health officer for Humboldt-Del Norte Counties.

CHLOE JACKSON, executive director of the Delaware County (Ind.) Tuberculosis Association, is the recipient of the 1953 Auerbach Memorial Award, given annually in honor of the late Murray A. Auerbach, former executive secretary, Indiana Tuberculosis Association.

FRANK H. JENNE,† for six years assistant secretary of the Cincinnati Public Health Federation, has resigned to become school health director, Dearborn, Mich.

MARGARET JOHNSON, former assistant professor of medical social work, University of British Columbia, is now medical social consultant, Alaska Department of Health, Juneau.

ANNIE LAURIE KEYES, Ph.D.,* is health education consultant, Public Health Division, U. S. Mutual Security Agency, Special Technical and Economic Mission, Manila, Philippines.

LOUISE KINTNER, former public relations director for The Lighthouse of the New York Association for the Blind, has been named assistant director of the National Student Nurse Recruitment Program, the Committee on Careers of the National League for Nursing, succeeding SARA WRIGHT KELLEY who recently moved to Munich, Germany, with her husband.

FRANCES KORD,† formerly engaged in the personnel study at the Yale School of Public Health, is now director of health education, Massachusetts Tuberculosis and Health League, Boston, succeeding RUTH KRAMAROW † resigned.

OLIVER LEROUX, M.D., formerly assistant director in Canada's Department of National Health and Welfare and member of WHO's Executive Board, has been appointed WHO's area representative in India.

FRANCIS I. LIVINGSTON, D.D.S., M.S.P.H.,† for the past six years director of the Division of Dental Health in Montana, is director, Bureau of Dental Services, New Hampshire State Health Department, Concord.

CLAYTON B. MATHER, M.D.,* former director of health, Greenwich, Conn., is now director of health of Waterbury.

PAULINE K. MATTHIS,† former director of program development, Colorado Tuberculosis Association, is now an associate in the program Development Division, National Tuberculosis Association, New York City.

JOSEPH NARDO, M.D.,† Santa Barbara County (Calif.) health officer, is on leave at Columbia University, completing work for a master's degree in public health. In his absence, LAUREN F. BUSBY, M.D., chief of the department's tuberculosis service, is serving as deputy health officer.

PAUL W. PENNINGROTH, Ph.D., for the past 10 years director, Child Guidance Clinic of Pinellas County, has been named chief psychologist of the recently created Division of Mental Health, Bureau of Maternal and Child Health, Florida State Board of Health, Jacksonville.

JOSEPH P. PETERS,† formerly a hospital consultant, Division of Medical and Hospital Resources, Public Health Service, has been appointed deputy administrator, Beekman-Downtown Hospital, New York, N. Y.

BELLE DALE POOLE, M.D.,† child health consultant, California State Department of Public Health, is on a year's leave as professor of maternal and child health with the Department of Preventive Medicine and Public Health, American University, Beirut, Lebanon.

GEOFFREY WILLIAM RAKE, M.B.,† former director of the Squibb Medical Division, Mathieson Chemical Corporation, has been appointed research professor of microbiology in medicine in both the School of Medicine and School of Veterinary Medicine in the University of Pennsylvania, Philadelphia.

KENNETH M. READ is sanitarian of Montana Public Health District No. 2, made up of Sanders and Lake Counties.

C. E. REDDICK, M.D.,* former deputy commissioner for local health services, Kentucky State Health Department, is now health officer, Bay City-County, Mich.

MARGARET LOUISE ROSS, graduate student and assistant in the School of Home Economics, Pennsylvania State College, State College, received the 1953 Mary Swartz Rose $1,000 Fellowship of the American Dietetic Asso-

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* Fellow.
† Member.

ciation for graduate study in nutrition or allied fields, at the association's thirty-sixth annual meeting in Los Angeles in August.

JOHN A. RUDD,† an associate of the Fund Raising Council, American City Bureau, having completed an assignment with the Sutter Hospitals in Sacramento, Calif., is now assigned to the United Hospitals Building Fund, Kansas City, Kans.

HOWARD A. RUSK, M.D.,† chairman of the Department of Physical Medicine and Rehabilitation, New York University College of Medicine, has been appointed to serve on the National Advisory Arthritis and Metabolic Diseases Council.

E. L. SHAFFER, Ph.D.,† director, Division of Laboratories, New Jersey State Department of Health, Trenton, received an award of the New Jersey Society of Clinical Pathologists for outstanding services to the society at its recent annual meeting.

JAMES R. SHAW, M.D., former chief of the Division of Hospitals, Public Health Service, has become chief of health programs, Bureau of Indian Affairs, Department of the Interior, Washington, D. C.

HERBERT SCHEFFER, M.D.,† senior general medical superintendent of the New York City Department of Hospitals, has resigned to become executive director of the Miriam Hospital, Providence, R. I.

LEONELL C. STRONG, Sc.D., research associate professor at the Yale University School of Medicine since 1933, has been appointed as associate cancer research scientist (biology) at the Roswell Park Memorial Institute in Buffalo, N. Y., a state cancer institution.

DONALD B. THOMAS, M.D.,† who has completed his public health residency training in the New York State Department of Health, is now health commissioner, Wyoming County Health Department, Warsaw, N. Y.

LONA L. TROTT, R.N.,* for the past two years assistant national director of Red Cross Nursing Services, has retired after more than 27 years with the organization and returned to her home in Lincoln, Neb.

OVAL L. WALKER, sanitarian, Texas State Department of Health since 1950, is now sanitarian, Bozeman-Gallatin County (Mont.) Health Department, succeeding LESTER D. GROOM, deceased.

DEATHS

CARL E. BUCK, Dr.P.H.,* professor of public health practice, School of Public Health, University of Michigan, Ann Arbor, Mich., on November 21 (Maternal and Child Health Section).

HELEN L. COOPS, Ph.D.,* associate professor, Department of Physical and Health Education, University of Cincinnati, Ohio, on November 13, 1953 (School Health Section).

K. GEORGE FALK, PH.D.,* president of the Hebrew Technical Institute and former director of the Laboratory of Industrial Hygiene, Inc., New York, N. Y. (Laboratory Section).

NORMAN R. GOLDSMITH, M.D.,† of Lancaster, Pa. (Public Health Education Section).

ROBERT M. HURSH, M.D.,† city health officer, Harrisburg, Pa., on November 13 (Health Officers Section).

KURT P. LORENZ, PH.D.,† research chemist, biological laboratories, Buck Seifer and Jost, New York, N. Y. (Laboratory Section).

ADOLF NICHTENHAUSER, M.D.,† of Jamaica, N. Y. (Public Health Education Section).

FRANK OVERTON, M.D., one of the first group of district health officers appointed by the New York State Department of Health, on October 10, 1953, at the age of 85.

HILDA FREEMAN SILVERMAN, biostatistician in the New York State Department of Health, Albany, for many years, on October 21, 1953, in an automobile accident.

WILLARD C. SMITH,* administrator of the Hospital Service Agency, Washington, D. C., on November 27 (Statistics Section).

CONFERENCES AND DATES

State and Regional Public Health Meetings:

Kansas Public Health Association. Hotel Lassen, Wichita. March 29–31.

Puerto Rico Public Health Association. Caribe Hilton Hotel, San Juan. February 2–6.

Southern Branch, APHA. Soreno Hotel, St. Petersburg, Fla. April 22–24.

Texas Public Health Association. Galveston. February 14–17.

Western Branch, APHA. Olympic Hotel, Seattle, Wash. May 9–12.

Meetings of Other Organizations Coming in January, February, and March:

American Academy of General Practice, Annual Scientific Assembly. Cleveland, Ohio. March 22–25.

American Camping Association. Annual Meeting. New York, N. Y. February 2–6.

American Society for Public Administration. Conrad Hilton Hotel, Chicago, Ill. March 19–21.

Council on Social Work Education. An-

---

* Fellow.
† Member.

nual Program Meeting. Washington, D. C. January 27–30.

National Health Council. Hotel Roosevelt, New York. March 24–26.

National Society for the Prevention of Blindness. Hotel Jefferson, St. Louis, Mo. March 10–12.

Pan American Medical Association. International Medical Cruise Congress. S. S. Nieuw Amsterdam. January 6–22.

Public Health Conference on Records and Statistics. Fifth National Meeting. Washington, D. C. March 22–26.

Second National Conference on Trichinosis. Auditorium, American Medical Association, Chicago, Ill. March 1.

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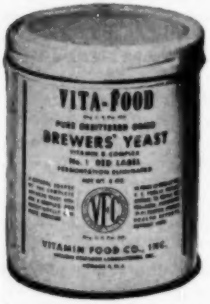

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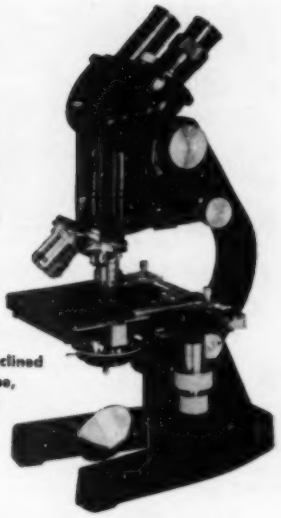

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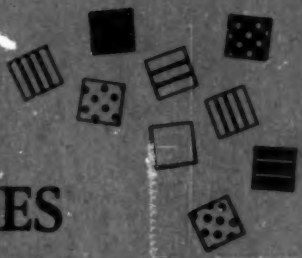

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